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POPULAR EDUCATION.

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LECTURES AND LETTERS

ON

POPULAR EDUCATION

INCLUDING A TRANSLATION OF

M. GUIZOT'S CELEBRATED LETTER

TO THE

PRIMARY TEACHERS OF FRANCE.

BY

ROBERT SULLIVAN, ESQ. A.M. T.C.D.

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PREFACE.

THE following ARTICLES appeared in "The Schoolmasters' Magazine," in the year 1839, under the signature of "A Late Inspector." They were contributed in the first instance at the solicitation of the proprietors and conductors of that useful publication; and they are now reprinted in a separate form at the request of a large number of National School teachers, who have long felt the want of a publication which would, in a cheap form, disseminate among them a knowledge of the improvements that have been made of late years in POPULAR EDUCATION.

It is, perhaps, necessary to add, that the Commissioners of National Education are not responsible for the publication of this volume, nor for the opinions it contains.

R. S.

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LECTURES AND LETTERS

ON

POPULAR EDUCATION.

EDUCATION IN FRANCE.—M. GUIZOT.

THE system of popular education at present in operation in France, owes its origin to a voluntary society established in the year 1815, for the encouragement of elementary education. This society, like the British and Foreign Society, in imitation of which it was formed, gave an impetus to popular education, which neither ignorance nor intolerance could withstand. But, though advocated and generously supported by all the friends of liberal education in France, it met with no encouragement from the government till the year 1831. On the 29th of April of that year, it was recognised by a royal ordinance as a "Society of Public Utility." Louis Philippe followed up this demonstration in favour of popular education, by appointing a commission to examine and class all the *educational* books in the kingdom.

To Louis Philippe, too, France is indebted for the GREAT CHARTER of popular education—I mean the royal ordinance of the 28th of June, 1833. By this wise and generous measure, a liberal and improved system of education is secured for the people, and a fixed and adequate salary for all deserving and properly qualified public teachers.

In a future number I may give for the information of your readers,* a translation of the principal provisions of this important and interesting law—a law more advantageous to France, and more glorious to the monarch and ministers who enacted it, than all the victories achieved by Napoleon and his generals. Napoleon's trophies were stained with blood, and moistened with tears; but no orphans wept, no widows mourned, over the peaceful triumphs of Louis Philippe.

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* Of the Schoolmasters' Magazine. See Preface.

I shall now state briefly a few of the results. The last report of the Minister of Public Instruction to the King, dated 1st of June, 1838, shows, that an improved system of elementary education is rapidly extending over the kingdom. According to this document there are in France 29,313 schools; 59,443 teachers or assistant teachers; and 2,681,694 children in course of education. Of these schools 26,370 are Roman Catholic; 563 Protestant; 28 for Jews; and 2,352 *mixed*, or for children of the different denominations recognised by the state. It is gratifying to find so many MIXED schools in France. They are increasing, and, indeed, the tendency of the new law is to increase them; for as it enacts that *the wishes of the parents shall be* CONSULTED *and* FOLLOWED *in all matters relating to the religious instruction of their children in the schools*, the proprietors in districts inhabited by different religious denominations, must either establish *mixed* schools for the entire population, or distinct and separate schools for the different religious denominations. *The interest of the landed proprietors will lead them to prefer* MIXED *schools*. One establishment is more easily supported than two or three.

As France is a Roman Catholic country we cannot expect to find, even in the "MIXED" schools, many children of other religious denominations. Of the 2,681,694 children in course of education, 2,598,587 are Roman Catholics; 75,881, Protestants; and 7,226, Jews. About three-fifths of the entire number of pupils attending these schools are males.

	Males.	Females.	Total.
Roman Catholics,	1,521,908,	1,076,679,	2,598,587
Protestants, .	45,022,	30,859,	75,881
Jews, .	4,617,	2,609,	7,226
Total number of pupils . .			2681,694

Of the 59,443 teachers or assistant teachers, 20,141 are females. Again, of the entire number, 48,675 are *lay*, and 10,768 *religious* teachers.

LAY TEACHERS—MALE.	
Commune or Parochial Teachers, ...	29,333
Private Teachers, ...	8,038
LAY TEACHERS—FEMALE.	
Commune or Parochial, ...	2,836
Mistresses of Private Schools, ...	8,468
Total number of Lay Teachers, ...	48,675
RELIGIOUS TEACHERS—MALE.	
Attached to Religious Institutions, ...	1,404
Teaching Private Schools, ...	527
RELIGIOUS TEACHERS—FEMALE.	
Attached to Religious Institutions, ...	4,892
Teaching Private Schools, ...	3,945
Total number of *Religious* Teachers, . . .	10,768

Since the year 1820, the number of children in course of education in France has nearly doubled. According to the statistical tables published by the "Société pour l'instruction elémentaire," in 1835, the number of pupils in the year 1820 was to the number of the inhabitants as 1 to 27, and in 1834 as 1 to 14½. In Ireland we are as yet in advance of France, as to the number of children in the course of education, compared to the entire population, the proportion being about as 1 pupil to 11 inhabitants. In Switzerland, Germany, Prussia, Holland, Belgium, and Norway, education is more advanced than in Ireland, the proportion being about 1 to 6 or 7 of the inhabitants. In other European countries, as Spain and Russia, popular education is in a lamentable state; the proportion being in the former, as 1 pupil to 346 inhabitants, and in the latter, as 1 to 656! In the United States of America the proportion is about as 1 pupil to 4 inhabitants. The New World has therefore, passed the Old in the march of education.

I may return to this subject again. In the meantime I shall conclude by translating a passage from the report of the Minister of Public Instruction (M. Guizot) to the King, which cannot but be gratifying to the majority of your readers. The report is on the means taken by the Minister to carry the Law on Primary Instruction into execution:—

"But this great measure must remain ineffectual, if not seconded by the earnest, energetic, and persevering co-operation of the real executors of this law, the primary teachers. Called to a kind of priesthood, as modest in its forms as it is elevated in its object, it is upon them principally the success of this law depends. Nothing is possible if the village teachers, as well as those who are placed in more elevated stations, be not profoundly penetrated with the importance and responsibility of their office.

"We have but too many reasons not to expect carelessness and apathy on the part of the elementary teachers. Prevented up to this period from having any direction in public education—neglected—abandoned to themselves—the primary teachers must have regarded themselves as isolated workmen, or solitary labourers, whose work no person ever dreamt of encouraging. Hence they could not but think little of themselves and of their work; and, with every one else, they forgot the respect due to themselves, as well as the importance and dignity of their office. Few in number are the men who, feeling that their exertions are always either undervalued or despised, can find in the testimony of their own conscience a motive and a reward sufficient to induce them to persevere in a work without *éclat*, and to prepare in silence results uncertain and remote.

"It was, therefore, absolutely necessary to raise in their own eyes this important body of men, who have so long laboured in the service of the public—to make them feel that for the time to come, however humble their situation, the eyes of the country would be upon them, and that the government, far from forgetting them, wished to bind them to the state, by links sacred and indissoluble—in short, to guide, encourage, and protect them.

"But, at the same time, we would have disappointed and deceived them, if, in the design of encouraging them, we had raised imaginations and excited hopes which we never could have realised—that would have been to substitute weak and worldly motives instead of that moral and religious devotedness which alone is able to supply teachers with the energy and perseverance necessary to the due discharge of the difficult duties of their office. An elevated soul and a subdued imagination—an energy of action in a narrow sphere—a high degree of intelligence, with an humble and contented spirit, are the great qualifications required in the primary teachers of France. To inspire them with sentiments such as these, to make them comprehend the duties of their sacred mission, was the object of the circular which I addressed to them, in transmitting copies of the law on primary instruction.

"Copies of the law and circular letters were despatched to 39,300 teachers. I invited them to reply, and already 13,850 answers have reached me. These I have had examined with care, and I am rejoiced to find that the majority of them have removed from my mind the fears which the low condition of the primary teachers had led me to entertain. In many of them I have found proofs of high intelligence and moral devotedness—a desire of doing good, so earnest and conscientious, that I cannot but entertain the most sanguine hopes of success from a power which requires only to be organized and encouraged. Numerous fears, however, are mingled with my hopes—many schools have been rendered useless by the apathy and incapacity of the teachers; in many others, the activity of the teachers has no principle but selfishness and worldly interest. Causes, however, must produce their effects, and it is not without cause that France awaits with impatience the effectual organization of elementary instruction. All things considered, however, we have no reason to despair. The teachers are evidently disposed to take their part in the general movement of which primary education is the object. Thousands of them express themselves grateful to the government, and promise to redouble their efforts and their zeal in the cause of popular education. The apathy of others is evidently due to their degraded condition, or to local chicanery and opposition. They will soon feel that now a government, the sincere friend of popular education, watches over them, and for them, and that if it is not in its power to secure for them a brilliant career, it guarantees, at least, a peaceable and honourable existence for all well-qualified and well-conducted teachers."

A TRANSLATION OF M. GUIZOT'S LETTER

TO THE PRIMARY TEACHERS OF FRANCE.

Sir—I transmit to you a copy of the law of the 28th June last, which I had the honour, by command of his Majesty, to introduce to the Chamber of Deputies.

This law, sir, is in truth the great charter of primary instruction; and it is, therefore, I am desirous that it should come directly to the knowledge, and remain permanently in the possession of every primary teacher in France. If you study it with care—if you meditate upon, and make yourself thoroughly acquainted with its intention and spirit—you will be certain of knowing well your duties and your rights, and the new situation destined for you by the legislature.

Do not undervalue the importance of your mission. Although the career of a primary teacher is without èclat—although his cares are confined to, and his days spent in, the narrow circle of a country parish, his labours interest society at large, and his profession participates in the importance and dignity of a great public duty. It is not for the sake of a parish only, nor for mere local interests, that the LAW *wills* that every native of France shall acquire the knowledge necessary to social and civilized life, without which, human intelligence sinks into stupidity, and often into brutality. It is for the sake of the state also, and for the interests of the public at large. It is because liberty can never be certain and complete unless among a people sufficiently enlightened to listen, on every emergency, to the voice of reason. Universal education is henceforth one of the guarantees of liberty, order, and social stability. As every principle in our government is founded on justice and reason, to diffuse education among the people, to develop their understandings and enlighten their minds is to strengthen our constitutional monarchy and secure its stability.

Be penetrated, then, with the importance of your mission; let its utility be ever present to your mind in the discharge of the difficult duties which it imposes upon you. You are aware that the government and the legislature are endeavouring to ameliorate the condition of the primary teachers. In the first place, the free exercise of their profession throughout the entire kingdom is guaranteed. The right of teaching can neither be withheld nor withdrawn from any person who shows himself capable and worthy of such a mission. Every parish must open an establishment for primary instruction. For every parish school a master must be provided, and for every master a fixed salary must be secured, which will be increased by special contributions and payments from the pupils, according to their means. A financial regulation, at once more becoming the dignity of their office, and more conducive to their personal interests, will relieve them from the trouble and the odium of collecting the payments of their pupils; and the privilege of not being called out to perform military service, shows the solicitude which the state entertains for them in their youth; and by the establishment of savings' banks, in connexion with their schools, a provision is secured for their old age. In the discharge of their duties they are subject only to enlightened and disinterested authorities, and their peaceful existence is placed beyond the power of persecution and tyranny.

In fine, the approbation of their legitimate superiors will encourage their exertions and make known their success; and perhaps a brilliant recompense, such as their modest ambition never aspired to, may come to attest that the Ministers of the King watch over their services, and know how to honour and reward them.

Yet, sir, we must not forget that all the provisions of the law—all the resources which power is possessed of—are unable to render the profession of a country teacher as attractive as it is useful. Society can never repay him who devotes himself to it all that it owes him. There is no fortune to be made—no fame to be acquired in the discharge of the difficult duties which he undertakes. Destined to see his youth and his strength pass away in the performance of monotonous and painful labours—surrounded by ignorance, and not unfrequently exposed to ingratitude and injustice, he would soon sink into despondence and despair were he not supported and encouraged by principles and motives more powerful than those which arise from the prospect of personal advantage. A deep sense of the moral importance of his labours must sustain and animate him. The heartfelt satisfaction of having served his fellow-men, and of having contributed in silence and in secret to the public good, is for him an adequate and glorious reward—a reward which it is in the power of conscience alone to bestow. It is his ambition to aim at nothing beyond his obscure and laborious occupation—to spend and be spent in making sacrifices scarcely noticed by those who profit by them—in short, to work for man and to look to God only for his reward.

Wherever primary instruction prospers, a religious feeling in those who diffuse it is found united to a love for learning. In such feelings and in such motives—worthy of a pure heart and an enlightened mind—may you, sir, find a satisfaction and an encouragement which, perhaps, neither reason nor patriotism can sufficiently supply. It is thus the numerous and difficult duties which are reserved for you will become easier and more agreeable. Permit me, sir, to remind you of them—

Henceforth, in becoming a primary teacher you belong to the public. The title which you bear, conferred by the minister, places you under his protection. The university claims you—but at the same time that it superintends, it protects you, and admits you to some of the privileges which make teaching a species of magistracy. But the new character it gives you authorises me to point out the obligations you enter into by receiving it. My authority is not limited to the enumeration of the provisions of the law, and of the regulations which you ought scrupulously to observe. It is my duty to establish and maintain the principles which should serve as a moral rule for the conduct of the teachers, the violation of which will compromise the character even of the body to which he will in future belong.

It is not sufficient to respect the letter of the law—personal interest will lead him to do this. It is necessary to prove by his conduct that he comprehends its moral obligation, and that, even in the absence of authority, he finds in his own breast a sacred and powerful sanction which would prevent him from infringing its dictates.

The first of your duties, sir, you owe to the children committed to your care. The teacher is invited by the parent to share in his natural authority, and he ought to exercise it with the same vigilance, and, if possible, with the same tenderness. Not only are the health and the lives of the children entrusted to your care, but the education of their hearts, and the development of their understandings depend almost entirely upon you.

As to what concerns *teaching*, properly so called, nothing shall be wanting which may be able to guide and assist you. Not only will a Normal School give you instruction and examples—not only will the committees take care to transmit to you useful and interesting information—but even the university itself will open and maintain a constant communication with you. The King, too, has been pleased to approve of the publication of a journal which is to be specially devoted to primary instruction. I shall take care that this general manual shall diffuse among you the knowledge of improved and successful methods of teaching—happy experiments in education—practical suggestions applicable to your schools—every official document which may interest you—and, in a word, every thing which may be able to direct zeal, secure success, and encourage emulation.

But as far as *moral* education is concerned, it is in you, sir, I confide. Nothing can supply in you the want of the desire to do well. You are not ignorant that it is that which, beyond all doubt, constitutes the most important and the most difficult part of your mission. You are not ignorant that every parent, in committing a child to your care, requires you to render him an honest man and a good citizen. You know that virtue is not always the concomitant of knowledge, and that the lessons which children receive may become pernicious to them if addressed only to their understandings. Let not the teacher, then, fear that he invades the rights of parents by giving his first care to the moral and religious culture of his pupils. In the same degree as he ought to guard against admitting into his school the spirit of sect and party, or of instilling into the minds of children religious dogmas, or political principles, which their parents disapprove—in the same degree I say he ought to elevate himself above the passing storms which agitate society, in order that he may be able to apply himself, without ceasing, to extend and establish those imperishable principles of reason and morality, without which the general order of civilized society is in peril, and to implant deeply in the young mind those seeds of virtue and honour which it will be out of the power of the passions of a more mature age to eradicate. Faith in Providence, the sanctity of duty, submission to the parental authority, respect for the laws, for the sovereign, for the rights of all men, *are the sentiments which he must unceasingly inculcate.* He must never, by his conversation or example, run the risk of weakening among children the veneration due to virtue. He must never, by expressions of hatred or revenge, dispose them to entertain those blind prejudices which create hostile nations, if I may so say, in the bosom of the same nation. The peace and concord which he will maintain in his school ought to prepare, and, if possible, secure for generations to come, union, tranquillity, and happiness.

The intercourse between the teacher and the parent can scarcely fail of being frequent. He should do every thing in his power to secure their respect and esteem; otherwise his influence over their children will be weakened, and his lessons unavailing. He cannot, however, be too careful, nor too prudent, in his intercourse with the parents. An intimacy lightly contracted may compromise his independence, and even involve him in those local dissensions which often divide and distract the inhabitants of the same parish. In yielding with complaisance to the reasonable request of the parents, he will take good care not to sacrifice to their capricious demands his principles of education and the discipline of his school. A school ought to be the sanctuary of justice and equity.

The duties of the teacher towards the authorities are more clear and not less important. He is himself an authority in the parish. How then can he set an example of insubordination? How then can he treat with disrespect the municipal authorities, the clergy, or the legal functionaries whose duty it is to preserve the public peace? What *a future* he would prepare for the population in the bosom of which he lives, if by his example, or by his disaffected and dangerous discourse, he excites among children a disrespectful and disloyal spirit, which may in after life lead them to be the instruments of immorality, and, perhaps, of anarchy.

The *maire* is the chief authority in the *commune* and at the head of the local superintendence. The duty and interest, therefore, of the teacher will lead him to show to the *maire*, on every occasion, the deference which is due to him. The *curé* (Catholic) and the *pastor* (Protestant) have also a right to respect, for their ministry comprehends all that is most elevated in human nature. If it happens, by any fatality, that the minister of religion refuses to the teacher his good will, he certainly ought not to have recourse to humiliating means to obtain it; but he ought to strive more and more, by his conduct, to merit it, and he will in the end succeed. By the success of his school he must disarm prejudices, and by his prudence he must deprive intolerance of every pretext. He ought to avoid hypocrisy as he would impiety. Nothing is more desirable than that concord should exist between the pastor and the teacher—they are both invested with a moral authority—they both exercise over children, but by different means, a common influence. Such a concord it is well worth making sacrifices to obtain: and I expect, from your intelligence and wisdom, that every honourable concession will be made to realize this union, without which our efforts for the education of the people will be often fruitless.

In fine, sir, I need not dilate upon your relations with the special authorities which watch over your school, and with the university itself. You will receive from them directions, advice, and often support against local difficulties and accidental enmities. The administration has no other interests than those of primary instruction, which, at bottom, are really yours. All it asks of you is to be penetrated more and more with the spirit of your mission; whilst on its part it will watch over your rights, over your interests, over your independence, do you maintain, by continual vigilance, the dignity of your office. Do not degrade it by associating with it employments incompatible with the profession of teaching. Have your eyes open to all means of ameliorating the instruction which you dispense around you. Assistance and support shall not be wanting to you.

In most of the large towns lectures on education will be given; in the Normal Schools places will be secured for such of you as wish to improve yourselves in the art of teaching; and it becomes every day easier for you to provide yourselves with a small library sufficient for your wants. In fine, in some districts, conferences have already been established among the teachers in which they will be able to bring their experience into a common stock, and encourage each other by mutual assistance.

At this moment in which, under the auspices of a new legislature, we enter both upon a new career—at this moment in which primary instruction commences to be the object of an experiment the most important and the most extensive yet attempted in this country, it is my duty, sir, to bring under your consideration the principles which guide the government in the administration of public instruction, and the hopes which are founded upon your co-operation. I count upon your efforts for the success of the great work which we undertake in common; do not doubt of the protection of the government, of its constant, of its active solicitude, for the precious interests which are confided to your care. Universal education is in its eyes one of the grandest and most important consequences of our charter. It longs to realize it, and upon this question, and upon every other, France will always find the wishes of the King to be in perfect unison with the spirit of the charter.

GUIZOT,
Minister of Public Instruction.

Copies of this letter were sent by the minister to 39,300 teachers, with an invitation to reply.

CIRCULAIRE AUX INSTITUTEURS.

MONSIEUR, je vous transmets la loi du 28 juin dernier, sur l'instruction primaire, ainsi que l'exposé des motifs qui l'accompagnait lorsque, d'aprés les ordres du Roi, j'ai eu l'honneur de la présenter, le 2 janvier dernier, à la chambre des députés.

Cette loi, Monsieur, est vraiment la charte de l'instruction primaire; c'est pourquoi je désire qu'elle parvienne directement à la connaissance et demeure en la possession de tout instituteur. Si vous l'étudiez avec soin, si vous méditez attentivement ses dispositions ainsi que les motifs qui en développent l'esprit; vous êtes assuré de bien connaître vos devoirs et vos droits, et la situation nouvelle que vous destinent nos institutions.

Ne vous y trompez pas, Monsieur: bien que la carrière de l'instituteur primaire soit sans éclat, bien que ses soins et ses

jours doivent le plus souvent se consumer dans l'enceinte d'une commune, ses travaux intéressent la société tout entière, et sa profession participe de l'importance des fonctions publiques. Ce n'est pas pour la commune seulement, et dans un intérêt purement local, que la loi veut que tous les Francais acquièrent, s'il est possible, les connaissances indispensables à la vie sociale, et sans lesquelles l'intelligence languit, et quelquefois s'abrutit; c'est aussi pour l'Etat lui-même, et dans l'intérêt public: c'est parce que la liberté n'est assurée et régulière que chez un peuple assez éclairé pour écouter en toute circonstance la voix de la raison. L'instruction primaire universelle est désormais une des garanties de l'ordre et de la stabilité sociale. Comme tout, dans les principes de notre gouvernement, est vrai et raisonnable, développer l'intelligence, propager les lumières, c'est assurer l'empire et la durée de la monarchie constitutionnelle.

Pénétrez-vous donc, Monsieur, de l'importance de votre mission; que son utilité vous soit toujours présente dans les travaux assidus qu'elle vous impose. Vous le voyez: la législation et le gouvernement se sont efforcés d'améliorer la condition et d'assurer l'avenir des instituteurs. D'abord le libre exercice de leur profession dans tout le royaume leur est garanti, et le droit d'enseigner ne peut être ni refusé, ni retiré à celui qui se montre capable et digne d'une telle mission. Chaque commune doit en outre ouvrir un asile à l'instruction primaire. A chaque école communale un maître est promis. A chaque instituteur communal un traitement fixe est assuré. Une rétribution spéciale et variable vient l'accroître. Un mode de perception, à la fois plus conforme à votre dignité et à vos intérêts, en facilite le recouvrement, sans gêner d'ailleurs la liberté des conventions particulières. Par l'institution des caisses d'épargne, des ressources sont préparées à la vieillesse des maîtres. Dès leur jeunesse, la dispense du service militaire leur prouve la sollicitude qu'ils inspirent à la société. Dans leurs fonctions, ils ne sont soumis qu'à des autorités éclairées et désintéressées. Leur existence est mise à l'abri de l'arbitraire ou de la persécution. Enfin l'approbation de leurs supérieurs légitimes encouragera leur bonne conduite et constatera leurs succès; et quelquefois meme une récompense brillante, à laquelle leur modeste ambition ne prétendait pas, peut venir leur attester que le gouvernement du Roi veille sur leurs services et sait les honorer.

Toutefois, Monsieur, je ne l'ignore point: la prévoyance de la loi, les ressources dont le pouvoir dispose ne réussiront jamais à rendre la simple profession d'instituteur communal aussi attrayante qu'elle est utile. La société ne saurait rendre, à celui qui s'y consacre, tout ce qu'il fait pour elle. Il n'y a point de fortune à faire, il n'y a guère de renommée à acquérir dans les obligations pénibles qu'il accomplit. Destiné à voir sa vie s'écouler dans un travail monotone, quelquefois même à rencontrer autour de lui l'injustice ou l'ingratitude de l'ignorance, il s'attristerait souvent et succomberait peut-être s'il ne puisait sa force et son courage ailleurs que dans les perspectives d'un intérêt immédiat et purement personnel. Il faut, qu'un sentiment profond de l'importance morale de ses travaux le soutienne et l'anime; que l'austère plaisir d'avoir servi les hommes et secretement contribué au bien public, devienne le digne salaire que lui donne sa conscience seule. C'est sa gloire de ne prétendre à rien au delà de son obscure et laborieuse condition, de s'épuiser en sacrifices à peine comptés de ceux qui en profitent, de travailler enfin pour les hommes et de n'attendre sa récompense que de Dieu.

Aussi voit-on que, partout où l'enseignement primaire a prospéré, une pensée religieuse s'est unie, dans ceux qui la répandent, au goût des lumières et de l'instruction. Puissiez-vous, Monsieur, trouver dans de telles espérances, dans ces croyances dignes d'un esprit sain et d'un cœur pur, une satisfaction et une constance que peut-être la raison seule et le seul patriotisme ne vous donneraient pas!

C'est ainsi que les devoirs nombreux et divers qui vous sont réservés vous paraîtront plus faciles, plus doux, et prendront sur vous plus d'empire. Il doit m'etre permis, Monsieur, de vous les rappeler. Désormais, en devenant instituteur communal, vous appartenez à l'instruction publique; le titre que vous portez, conféré par le ministre, est placé sous sa sauvegarde. L'Université vous réclame; en même temps qu'elle vous surveille, elle vous protége, et vous admet à quelques-uns des droits qui font de l'enseignement une sorte de magistrature. Mais le nouveau caractère qui vous est donné m'autorise à vous retracer les engagements que vous contractez en le recevant. Mon droit ne se borne pas à vous rappeler les dispositions des lois et règlements que vous devez scrupuleusement observer; c'est mon devoir d'établir et de maintenir les principes qui doivent servir de règle morale à la conduite de l'instituteur, et dont la violation compromettrait la dignité même du corps auquel il pourra appartenir désormais. Il ne suffit pas en effet de respecter le texte des lois; l'intéret seul y pourrait contraindre, car elles se vengent de celui qui les enfreint; il faut encore et surtout prouver par sa conduite qu'on a compris la raison morale des lois, qu'on accepte volontairement et de cœur l'ordre qu'elles ont pour but de maintenir, et qu'a défaut de leur autorité on trouverait dans sa conscience une puissance sainte comme les lois, et non moins impérieuse.

Les premiers de vos devoirs, Monsieur, sont envers les enfants confiés à vois soins. L'instituteur est appelé par le pere de famille au partage de son autorité naturelle; il doit l'exercer avec la même vigilance et presque avec la même tendresse. Non-seulement la vie et la santé des enfants sont remisses à sa garde, mais l' éducation de leur cœur et de leur intelligence dépend de lui presque tout entiere. En ce qui concerne l'enseignement proprement dit, rien ne vous manquera de ce qui peut vous guider. Non-seulement une école normale vous donnera des leçons et des exemples ; non-seulement les comités s'attacheront à vous transmettre des instructions utiles, mais encore l'Université même se maintiendra avec vous en constante communication. Le Roi a bien voulu approuver la publication d'un journal spécialement destiné à l'enseignement primaire. Je veillerai à ce que le *Manuel général* répande partout, avec les actes officiels qui vous intéressent, la connaissance des méthodes sûres, des tentatives heureuses, les notions pratiques que réclament les écoles, la comparaison des résultats obtenus en France ou à l'étranger, enfin tout ce qui peut diriger le zèle, faciliter le succès, entretenir l'émulation.

Mais quant à l'éducation morale, c'est en vous surtout, Monsieur, que je me fie. Rien ne peut suppléer en vous la volonté de bien faire. Vous n'ignorez pas que c'est là, sans aucun doute, la plus importante et la plus difficile partie de votre mission. Vous n'ignorez pas qu'en vous confiant un enfant, chaque famille vous demande de lui rendre un honnête homme, et le pays un bon citoyen. Vous le savez : les vertus ne suivent pas toujours les lumières, et les leçons que reçoit l'enfance pourraient lui devenir funestes si elles ne s'adressaient qu'à son intelligence. Que l'instituteur ne craigne donc pas d'entreprendre sur les droits des familles en donnant ses premiers soins à la culture intérieure de l'âme de ses éleves. Autant il doit se garder d'ouvrir son école à l'esprit de secte ou de parti, et de nourrir les enfants dans des doctrines religieuses ou politiques qui les mettent pour ainsi dire en révolte contre l'autorité des conseils domestiques, autant il doit s'élever au-dessus des querelles passagères qui agitent la société, pour s'appliquer sans cesse à propager, à affermir ces principes impérissables de morale et de raison sans lesquels l'ordre universel est en péril, et à jeter profondément dans de jeunes cœurs ces semences de vertu et d'honneur que l'âge et les passions n'étoufferont point. La foi dans la Providence, la sainteté du devoir, la soumission à l'autorité paternelle, le respect dû aux lois, au prince, aux droits de tous, tels sont les sentiments qu'il s'attachera à développer. Jamais, par sa conversation ou son exemple, il ne risquera d'ébranler chez les enfants la vénération due au bien ; jamais, par des paroles de haine ou de vengeance, il ne les disposera à ces préventions aveugles qui créent, pour ainsi dire, des nations ennemies au sein de la même nation. La paix et la concorde qu'il maintiendra dans son école doivent, s'il est possible, préparer le calme et l'union des générations à venir.

Les rapports de l'instituteur avec les parents ne peuvent manquer d'être fréquents. La bienveillance y doit présider : s'il ne possédait la bienveillance des familles, son autorité sur les enfants serait compromise, et le fruit de ses leçons serait perdu pour eux. Il ne saurait donc porter trop de soin et de prudence dans cette sorte de relations. Une intimité légerement contractée pourrait exposer son indépendance, quelquefois meme l'engager dans ces dissentions locales qui désolent souvent les petites communes. En se prêtant avec complaisance aux demandes raisonnables des parents, il se gardera bien de sacrifier à leurs capricieuses exigences ses principes d'éducation et la discipline de son école. Une école doit être l'asile de l'égalité, c'est-à-dire de la justice.

Les devoirs de l'instituteur envers l'autorité sont plus clairs encore et non moins importants. Il est lui-meme une autorité dans la commune: comment donc donnerait-il l'exemple de l'insubordination ? Comment ne respecterait-il pas les magistrats municipaux, l'autorité religieuse, les pouvoirs légaux qui maintiennent la sécurité publique ? Quel avenir il préparerait à la population au sein de laquelle il vit, si, par son exemple ou par des discours malveillants, il excitait chez les enfants cette disposition à tout méconnaître, à tout insulter, qui peut devenir dans un autre âge l'instrument de l'immoralité et quelquefois de l'anarchie !

Le maire est le chef de la commune; il est à la tete de la surveillance locale ; l'intérêt pressant comme le devoir de l'instituteur est donc de lui témoigner en toute occasion la déférence qui lui est due. Le curé ou le pasteur ont aussi droit au respect, car leur ministère répond à ce qu'il y a de plus élevé dans la nature humaine. S'il arrivait que, par quelque fatalité le ministre de la religion refusât à l'instituteur une juste bienveillance, celui-ci ne devrait pas sans doute s'humilier pour la reconquérir, mais il s'appliquerait de plus en plus à la mériter par sa conduite, et il saurait l'attendre. C'est au succes de son école à désarmer des préventions injustes: c'est à sa prudence à ne donner aucun prétexte à l'intolérance. Il doit éviter l'hypocrisie á l'égal de l'impiété. Rien d'ailleurs n'est plus désirable que l'accord du prêtre et de l'instituteur; tous deux sont revêtus d'une autorité morale; tous deux peuvent s'entendre pour exercer sur les enfants, par des moyens divers, une commune influence. Un tel accord vaut bien qu'on fasse, pour l'obtenir, quelques sacrifices, et j'attends de vos lumierés et de votre sagesse que rien d'honorable ne vous coûtera pour réaliser cette union sans laquelle nos efforts pour l'instruction populaire seraient souvent infructueux.

Enfin, Monsieur, je n'ai pas besoin d'insister sur vos relations avec les autorités spéciales qui veillent sur les écoles, avec l'Université elle-meme: vous trouverez là des conseils, une direction nécessaire, souvent un appui contre des difficultés locales et des inimitiés accidentelles. L'administration n'a point d'autres intérêts que ceux de l'instruction primaire, qui au fond sont les vôtres. Elle ne vous demande que de vous pénétrer de plus en plus de l'esprit de votre mission. Tandis que de son côté elle veillera sur vos droits, sur vos intérêts, sur votre avenir, maintenez, par une vigilance continuelle, la dignité de votre état; ne l'altérez point par des spéculations inconvenantes, par des occupations incompatibles avec l'enseignement; ayez les yeux ouverts sur tous les moyens d'améliorer l'instruction que vous dispensez autour de vous. Les secours ne vous manqueront pas: dans la plupart des grandes villes, des cours de perfectionnement sont ouverts; dans les écoles normales, des places sont ménagés aux instituteurs qui voudraient venir y retremper leur enseignement. Il devient chaque jour plus facile de vous composer à peu de frais une bibliothèque suffisante à vos besoins. Enfin, dans quelques arrondissements, dans quelques cantons, des conférences ont dejà été établies entre les instituteurs: c'est là qu'ils peuvent mettre leur experience en commun, et s'encourager les uns les autres en s'aidant mutuellement.

Au moment où, sous les auspices d'une legislation nouvelle, nous entrons tous dans une nouvelle carrière; au moment où l'instruction primaire va être l'objet de l'experience la plus réelle et la plus etendue qui ait encore été tentée dans notre patrie, j'ai dû, Monsieur, vous rappeler les principes qui guident l'administration de l'instruction publique, et les esperances qu'elle fonde sur vous. Je compte sur tous vos efforts pour faire réussir l'œuvre que nous entreprenons en commun: ne doutez jamais de la protection du gouvernement, de sa constante, de son active sollicitude pour les précieux intérêts qui vous sont confiés. L'universalite de l'instruction primaire est a ses yeux l'une des plus grandes et des plus pressantes conséquences de notre charte; il lui tarde de la réaliser. Sur cette question comme sur toute autre, la France trouvera toujours d'accord l'esprit de la charte et la volonté du Roi.

Recevez, etc.

Le Ministre Secrétaire d' état, au département de l' instruction publique.

GUIZOT.

P.S.—Je vous invite à m'accuser directement réception de cette lettre. Je tiens à m'assurer ainsi qu'elle vous est parvenue.

INTRODUCTORY LECTURE,

TO THE TEACHERS IN TRAINING IN THE NORMAL SCHOOL OF THE COMMISSIONERS OF NATIONAL EDUCATION.

[THE following address was published in "The SCHOOLMASTERS' MAGAZINE" for September, 1839, under the title of "Substance of an Introductory Lecture delivered to Teachers in training, on the 12th of April, 1838, by a late Inspector." The object of the author was, to bring strongly before the teachers the *defects* of the elementary schools generally in Ireland, with the view to their entire removal. He thinks it necessary to make this observation, lest it might be supposed that he meant to depreciate the labours of another Society in the cause of popular education. It is but just to add that the defects complained of are gradually disappearing from the National Schools, particularly since the appointment of LOCAL INSPECTORS, and the extension of the TRAINING SYSTEM in the Normal and Model Schools. In fact, the Commissioners of National Education are gradually raising up a new and improved class of elementary teachers, such as the most sanguine friends of the system could scarcely have hoped to see in their days in Ireland. It is now an admitted fact, that the "hedge schoolmaster" is fast disappearing before the intelligent, disciplined, and respectable teacher.]

Before commencing a regular course of LECTURES and EXAMINATIONS on those branches of education to which my duty will in future confine me, it has struck me that a few preliminary and practical observations on the subject of education generally, would be useful, and I hope interesting, to many of you. You have all more or less acquaintance with the old, and indeed, still prevailing mode of teaching pursued in country schools, and you have had frequent opportunities, particularly since your admission into this Establishment, of witnessing the new and improved system in full operation. I need not, therefore, stop to point out to you the defects of the old plan, nor the advantages of the new; you have witnessed both, and I would consider it an insult to your understanding, to offer a single argument in favour of the new or INTELLECTUAL system, which, indeed, alone deserves the name of education. But besides its superiority, which to persons of intelligence is a sufficient recommendation, the new system has additional and peculiar claims upon your attention. You have been brought up here at a considerable expense to the public for the express purpose of being instructed in it, and I need not add, that it is your duty not only to make yourselves masters of it while here, but on your return to introduce and carry it into full effect in your respective schools. But I am reminded by the great diligence and desire for information which you all manifested during the short time that I superintended your studies, that to you such admonitions are unnecessary. The result of my experience, however, obliges me to say, and I say it with great regret, that some of the teachers hitherto trained in this establishment have done little credit either to themselves or to us. When it is known that a teacher has been instructed for three months* in the Model School, great things are, naturally, expected of him—but if it be found that his mode of teaching differs in no respect from the plan pursued by common, or as they are usually called hedge schoolmasters, and that no improvement is perceptible, either in the answering and classification of his scholars, or in the arrangement and general appearance of his school, the usual inference is, that neither the training in the Model School nor the visits of the Inspector are of the slightest use.

I am quite aware of the difficulties which many of our teachers have to contend with in their efforts to introduce the improved system into their schools. Very many of the managers, I am sorry to say, fail to second and support them as they ought, and the parents of their pupils are, in general, prejudiced in favour of the old system and opposed to the introduction of the new. Nay, many of them, through ignorance or perversity, refuse to provide their children with the publications of the Board, and insist that they shall be taught in whatever books they choose to send, which besides being often objectionable, are usually of so heterogeneous a nature as to render classification impossible. It is useless to tell persons of this class that such is the effect. They are rejoiced to hear it, for the old and, in their estimation, the only way of teaching is, for the master to hear every child in its own book, and, as I have heard many of them say, "in a *class* by itself!" But the parents of the children, even if competent judges, have no right to interfere in the business of the school, nor should the manager suffer them. As well might the teacher interfere in the business of their farms, and insist that this field must be sowed with oats, and that planted with potatoes—or, to follow the analogy more closely, that they must continue to plough their horses by the tail, and burn the oats out of the sheaves without threshing it, as their fathers before them were accustomed to do.

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* The period has since been extended to between four and five months; and for a considerable time previous to their being summoned for training, they are expected to be preparing for the course under the directions of the Local Superintendents. In the Seventh Report of the Commissioners, will be found a full account of the TRAINING COURSE.

I need not tell you that there are many such parents, nor how difficult it is to overcome their prejudices—but their prejudices may be overcome, not indeed by argument, for that would only tend to confirm them, but by a proof at once practical and popular. Let the teacher, instead of extolling the new system *act upon it*, and its superior excellence will soon be made manifest by the progress and proficiency of his scholars, and the order and regularity of his school. This is the argument to which a judicious teacher resorts in favour of his system—this is the way he triumphs over the prejudices of the people!

But I am bound to state that the people are not entirely to blame for the prejudices that exist against the new or improved system of education. It is proverbial that persons of weak judgment should never be permitted to inspect *half-finished* work, because they are always sure to undervalue or despise it. Can it be expected then, that the people, who, if they reason at all, only reason from what they see, can approve of a system which the generality of teachers introduce so imperfectly and carry on so slovenly. In fact, many of the teachers *caricature* rather than carry into effect the improved system of education. I allude, particularly, to the great majority of the teachers trained by the Kildare-place Society. I beg you to believe that I am far from wishing to detract from the merits of the Kildare-place Society, to whose labours in the cause of popular education this country is so deeply indebted—I merely state a well-known fact, that the MONITORIAL OR MUTUAL-INSTRUCTION system was first brought into popular disrepute in this country by the injudicious, imperfect, and objectionable manner, in which it was introduced and worked by the generality of their teachers. Many of them seemed to think that it was invented merely to save themselves trouble, and that all they had to do was, to stick pointers in the hands of a certain number of children, and order them to teach the others. Had the teacher taken care that the boy to whom he delegated his duties should be always superior in information, and in the other qualifications necessary to make a good monitor to the children committed to his charge, he would not have been wanting to his duty, provided that he was constantly present himself superintending, directing, and animating the whole school. But it was often found, and children soon make the discovery, that boys were appointed to teach others what they were ignorant of themselves. And though we, in the great world, must often submit to be taught things which we know perfectly well, by persons who know nothing whatever about them, yet children do not willingly submit to this; and hence, on their return from school, they complained to their parents that the master made Tom this, or Pat that, teach them their lessons though they were not half so good scholars as themselves. The parents naturally entered into the feelings of their children, and declared war against a system which, as far as they had seen of it, sets a few of the scholars to teach, or tease, or perhaps tyrannize over the others, in order that the master may stand at the door with his pipe in his teeth, or stick himself in his desk or at the fire, with his accustomed book or favourite newspaper in his hand. Such complaints, I can assure you, were very general among the parents, and the consequence was, that such of them as were able to pay for their children either sent them elsewhere, or, if there were no other school in the neighbourhood, stipulated with the master to teach *their* children himself, and in the *old way*, and to keep his tablets, and slates, and monitors for the poor scholars, for whom alone such a system was fitting! For such a feeling entered into, and increased the prejudices of the better or paying class of parents against the *monitorial* system; because the *Lancasterian* schools, which first introduced it, were established for the *gratuitous* education of the children of the poor, they connected with it the idea of charity, and considered it a kind of degradation to have their children taught in a similar way.

I have dwelt longer upon this, because I know that those prejudices have been extended to the National Schools, and I have shown you how they originated, in order that you may be the better able to meet and overcome them. And I need not add, that it is your duty, and your interest (and you will always find that your true interest follows in the path of duty), to do every thing in your power to overcome them. Just think how much the respectability of your schools and the emoluments of your labours would be increased, if the better or paying class of parents could be induced to send their children to them. And what prevents them from doing this, but the low character, I mean literary character, of the schools that have been hitherto established for the education of the people. All the qualifications required in a Kildare-place-Society teacher was an acquaintance with the rudiments of the three common branches of education—reading, writing, and arithmetic. Many of their teachers, it is true, possessed much higher, several of them the very highest qualifications—but I speak of them as a body, which always determines the general character, and I repeat, that their qualifications, in general, consisted in a common acquaintance with the three branches I have mentioned, an imperfect knowledge of the monitorial system, and a little *mechanical* training, which did many of them more harm than good, for it led them to pay more attention to the mere *forms* and arrangements of their schools, than to the education and *intellectual* improvement of their scholars. It had also the effect, and this was a very general complaint, of making many of them conceited, and pedantic, and disposed to look down upon *untrained* teachers, though perhaps much their superiors in point of knowledge, because they could not, like themselves, talk learnedly on Report Books and Registers, and average attendance, and class-roll, and monitors! For the teachers who knew least about the improved system always talked most about it, and the less necessity there was for introducing it into their little schools, the more pertinacious were they in pressing it in all its forms. Many a manager has declared to me that he would prefer an untrained to a trained teacher, even if inferior in point of information, just because he is more *practicable*, more disposed to take advice, and more diligent in the discharge of the substantial duties of his office.

It was not so much pride that prevented the better, or paying class of parents from sending their children to those schools, but, as I have before observed, their low literary character. Even if the little that was taught in them had been taught correctly, no *wise* parent would have hesitated to send his children to them to learn as much as the master professed to teach; but they complained that the contrary was the case, and that even if the elementary branches were taught in them correctly, it was impossible for their children to attend them without destroying their pronunciation, and deteriorating their manners.

I have stated that those prejudices—perhaps I should say *objections*—have been extended to the National Schools, and I don't wonder at it, for some of them deserve no better character than those I have just described; but I am happy to say, that the great majority of them are, what they are all intended to be, decidedly superior to any schools that have been hitherto established for the education of the people.

The qualifications of the National schoolmasters, at least of those that have been selected for training, are of a much higher order. Before admission into this establishment, they must be prepared to pass creditably through an examination in the excellent publications of the Board, including their treatises on arithmetic, grammar, geography, geometry, and book-keeping; and during their continuance in it, a period of three* months, their entire time is occupied either in improving and perfecting themselves in this extensive course, under highly-qualified masters; or what is of still greater consequence, in learning the most approved methods of communicating the knowledge they have previously acquired by actual practice in the Model Schools.

But there is nothing more calculated to raise the character of the National Schools than the books that have been published for their use. The superior excellence of these publications is acknowledged even by the opponents of the National System; so much so indeed, that many of them, to my knowledge, use them in their own families for the education of their children; and they are now beginning, I understand, to be very generally introduced into the higher class of schools and academies, particularly in England and Scotland.

Let the masters of the National Schools then teach those books as they ought to be taught, and let them make their schools as they were intended to be, models of order, system, and decorum, and no wise parent will hesitate to send his children to them, merely because they have been established principallyfor the education of the humbler classes. Nor will pride so far prevail over even weak-minded parents as to make them act contrary to their own interests, which they would clearly do, if they sent their children to a distance to be taught, at a great expense, what they might have learned equally well in a neighbouring National School, at a cost comparatively trifling. For, as I have said before, and I cannot say it too often, pride is not the sole, nor even the principal cause which prevents the better or paying class of parents from sending their children to the schools that have been established for the education of the people—but the inferior qualifications, carelessness, and conceit of the generality of the teachers. So strong is the prejudice against schools of this class, and so little of pride is mixed up with it, that I have very often found that the waiters, hostlers, and even helpers, at the different inns, at which I put up while travelling as an Inspector,* preferred sending their children to the pay schools, even of the lowest class, rather than to the National Schools, though equally or more convenient in point of distance. And though a few of them did say, when I inquired into the reason of this preference, that they did not like to send their children to *poor* schools as long as they were able to pay for them elsewhere, yet the general answer was, "that the masters in the National Schools were just as bad as the masters in the Kildare-place Schools—that they set the children to teach each other, and did nothing themselves."

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* Since extended to between four and five months.

Besides the good effects which the common education of the children of the lower and more respectable classes, in schools *properly* conducted, would have upon both, I am the more anxious for it, because I fear that this is the only practicable plan for raising the qualifications and bettering the condition of the teachers.

I shall now give you TWELVE PRACTICAL RULES, which though brief, embrace almost all the duties required of a National schoolmaster, and conclude with a few observations upon each.

The teachers of National Schools are required—*To keep at least one copy of the* GENERAL LESSON *suspended conspicuously in the school-room, and to inculcate the principles contained in it on the minds of their pupils.*

Of all the lessons in the school the GENERAL LESSON is the most important. It is, in fact, the great lesson which the NATIONAL Schools have been established to teach the rising generation,—and the *National* schoolmaster who neglects to inculcate the principles contained in it on the minds of his pupils, has failed in the performance of the first and most important duty required of him by his office. The first thing I used to look at on entering a school was the General Lesson, and if I found it put up in a neat frame, or even pasted on a board, I was at once prepossessed in favour of the teacher—and first impressions, you know, are very important; but if I found it sticking against the wall, and *consequently* damp, dirty, and illegible, I could not help feeling a degree of prejudice against the teacher, which, perhaps, may have prevented me from giving him full credit for the diligent discharge of the more difficult duties of his office. You think this wrong, but you will observe that I have said, *perhaps* this may have been the case, I hope and trust that it never has, for I have always been disposed to look upon teachers with a favourable and friendly eye, and those who know me best will, I think, acknowledge that I have been

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* This refers to the author's first tours of inspection, in the years 1832 and 1833.

> To their faults (for we all have faults) a *little* blind,
> And to their merits ever kind.

But the conclusion is natural, and by no means unfair, that if a teacher neglects the first rule, which is so easy of accomplishment, he must be remiss in the discharge of the more difficult duties of his office.

The SECOND RULE is—*To exclude from the school, during school hours, all catechisms and books inculcating peculiar religious opinions.*

By exclusion from the school, I mean that books of a peculiar *religious* character should not be produced, nor even permitted to appear in the school-room during the period set apart for general or *literary* education. The non-observance of this violates not only the great rule of order and regularity—*a time and a place for every thing, and every thing in its proper time and place*—but the National system itself. This is so clearly the case, that I need not dwell upon it. And yet it appears not only from the evidence given against the system on a late occasion,* but from the reports of our own Inspectors, that catechisms and books of a peculiar religious character are frequently found in the hands of the children, during the period publicly notified in the SCHOOL RULES for general or *literary* instruction. I am aware that teachers cannot always prevent this infringement of our rules, for the children often, without their knowledge, bring such books in their hands, particularly if there be a scarcity of National school-books in the school. In almost every case I found that this irregularity was occasioned by a deficiency of National school-books, which naturally led the children to bring with them their *old* school-books; for catechisms and sectarian publications were and still are generally used as school-books in country schools, not under the control of any Society or Board.

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* The Parliamentary Inquiry in 1837.

But as this rule is, also, very easily carried into effect, and as nothing has brought more odium upon the National Schools than the violation of it, the teachers will, I trust, attend strictly to it in future. If the children bring their catechisms in their hands for the purpose of being instructed in them, during the time notified for *religious* education, it is easy for the teacher to see that they are collected and put up in the school-press till the general or *literary* business is over.

The THIRD RULE is—*To avoid fairs, markets, and meetings; but above all,* POLITICAL *meetings and political connexions of every kind, and to do nothing either in or out of school which might have a tendency to confine it to any one denomination of children.*

As one of the main objects of the Commissioners is, to unite in one system of education children of all denominations, the National schoolmaster who counteracts, by his conduct, this benevolent purpose, is guilty of a gross dereliction of duty; and this he will assuredly do if he connects himself with politics or party, *or is even suspected of it.* This is so clearly the case, that I need not dwell upon it. As to attending *fairs* and *markets,* you may not, perhaps, see the necessity for this prohibition.

The generality of teachers, though they can have little or no business at such meetings, seem to think that they cannot possibly go on without them, and therefore they make it a point to attend all fairs, markets, and meetings that are held within walking distance of their schools. During my first and second tours of inspection,* there was scarcely a week that I did not lose a day or more, often after travelling several miles, in consequence of the prevalence of this practice. But the masters of the National Schools have, in a great measure, given up this habit, and I trust they will soon give it up altogether. By frequenting such places, they not only lose their time, but what is worse, the respect due to their profession; for they cannot attend them without mixing in companionship with the people, and the moment they do that, their usefulness, as respectable teachers, is destroyed.

The FOURTH RULE is—*To keep the accounts of the attendance and proficiency of the pupils according to the forms prescribed by the Board.*

A gentleman who visited, last winter,† all the National Schools in the diocese of ———, stated in his evidence before the late Parliamentary Committee, that he found the accounts of the number and attendance of the scholars incorrectly or fraudulently kept in almost every one of them. It so happened that the schools in which he found the Report Books and Class Rolls most incorrect, and, as he conceived, fraudulent, were, though he was not aware of it, conducted by teachers who had been trained by, and had taught under the Kildare-place Society. I just mention this to show you, that by these, and similar charges, the confidence of the public in the correctness of the accounts given of the number and attendance of the children at all schools of the kind, has been considerably diminished. Keep your accounts, then, according to the precise form prescribed by the Board, and the public confidence will soon be restored. In fact, it is out of the power of a *National* schoolmaster, without exposing himself to certain detection, to take credit for a greater number of scholars than there is in actual attendance at his school, for he is obliged to return twice a year to the Board, not only the number, but the *names* of his pupils, and the class to which each of them belongs; which return must be certified and signed by the manager of each school.

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* In 1832 and 1833.

† In the winter of 1837.

The Board have, therefore, taken much more pains to arrive at accuracy than the Kildare-place Society did, for they merely required the *number* of pupils in attendance at each school. This plan, too, besides ascertaining, with the greatest accuracy, the number of pupils at each school, enables the Board to judge of the general progress, by marking at each return of the half-yearly roll their advancement from class to class. But the accuracy of the *average* attendance, or the number of pupils *present* one day with another throughout the week or quarter, must depend in a great measure upon the care and integrity of the teachers; and it is to the AVERAGE attendance, as recorded in the Class Lists and Report Books, that I am now directing your attention; and I am sure that it is unnecessary for me to add, that the teacher capable of making incorrect entries in his books, is guilty of gross immorality, and is consequently unfit to conduct any school, much less a *National* one.

The FIFTH RULE is—*To classify the children according to the National school-books, to study those books themselves, and to teach according to the improved methods, as pointed out in their several prefaces.*

By classifying the children according to the National school-books, I mean that each child should be classed as learning the FIRST, SECOND, THIRD, FOURTH, or FIFTH LESSON-BOOK; by which arrangement you will banish from your schools all the old and heterogeneous school-books, which rendered classification impossible, increased the labour of the teachers, and retarded the progress of their pupils. And as the National school-books are formed on the *progressive* principle—that is, each lesson made a little more difficult than the preceding one (the one rising above the other, like steps of stairs)—it will be necessary for you to divide each class into divisions to correspond with the progress and proficiency of the children. For instance, the first division of the first class-book will be learning the ALPHABET; the second, MONOSYLLABLES; and so on.

Secondly—The teachers are required *to study the National school-books themselves.* I would have considered it useless and absurd to lay it down as a rule, that a person should study a book himself before he attempted to teach it to others, had not experience convinced me of the necessity. Besides, the National school-books are so much above the common class, and contain so much information on subjects, not hitherto within the reach of the people, that it is necessary even for our best teachers to study them diligently and deeply before they attempt to teach them to others.

The third branch of this rule recommends you "*to teach according to the improved methods, as pointed out in the several prefaces of the National school-books.*" As you have those prefaces in your hands, it would be doing you an injustice, I hope, to suppose that you are not perfectly acquainted with them. I shall not, therefore, enter into them, except to quote one sentence from the preface of the First Book. "It is recommended to teachers to make their pupils perfectly acquainted with one lesson before they proceed to another, and to exercise them as much as possible on the *meaning* of such words and sentences as admit of being defined and explained." Here, even in the preface of the First Book, and in a few words, you have the foundation of the improved or INTELLECTUAL system of education, which you are required to introduce and carry into effect in your respective schools, and which you will be able to do with ease, if you begin by attending to the excellent recommendations here given.

The SIXTH RULE is—*To observe themselves, and to impress upon the minds of their pupils, the great rule of regularity and order*—A TIME AND A PLACE FOR EVERY THING, AND EVERY THING IN ITS PROPER TIME AND PLACE.

This rule is so plain, and the necessity for it so strong, that I shall only observe, that the teacher who expects his pupils to do every thing in its proper time, and to put every thing in its proper place—in short, to be punctual, regular, and systematic, must set them an example himself; otherwise he will act the part of the crab in the fable, that reprimanded her little ones for walking sideways, though, as she was reminded by one of them, she always walked after that fashion herself.

The SEVENTH RULE is—*To promote, both by precept and example, cleanliness and neatness; to see that no children come to school without having their face and hands washed and their hair combed; to cause the school-room to be swept out every* EVENING, *and to endeavour to have it white-washed at least once a year.*

This rule is akin to the preceding one, and equally necessary. The Irish peasantry are proverbial for their want of cleanliness, tidiness, and order. The most useful lessons, then, that can be taught their children, are the habits recommended in this and the preceding rule. In fact, it is only by *education* that we can hope to take away this reproach from our country.

The EIGHTH RULE is—*To pay the strictest attention to the morals and general conduct of their pupils, and to omit no opportunity of inculcating the principles of* TRUTH *and* HONESTY; *the duties of respect to superiors, and obedience to all persons placed in authority over them.*

I need scarcely observe, that mere *literary* education without *moral* training, is to be deprecated rather than desired. The good and conscientious teacher, therefore, will consider it his first duty to inculcate the principles recommended in this rule upon the minds of his pupils. In fact, if children be not taught the duties of love and obedience to parents, respect and subordination to superiors, the principles of truth and honesty, and, in a word, the precepts and practice of morality, it is better for themselves, and safer for society, to leave them entirely uneducated; for bad as ignorance is, education without *morality* is a thousand times worse.

The NINTH RULE is—*To evince a regard for the improvement and general welfare of their pupils; to treat them with kindness, combined with firmness; and to aim at governing them by their affections and reason, rather than by harshness and severity.*

There is no rule upon which I would dwell with greater pleasure than upon this; but time presses—besides, it would be doing you an injustice, I hope, to suppose, after the lectures which you have so recently heard on this subject, that much was necessary to convince you of the cruelty and absurdity of—what I hope I may call the *old* system of flogging. I may say *system*, because the generality of schoolmasters, if we may judge from the frequency and regularity of their flogging, seemed to think that boys could no more learn without whipping, than their tops could spin without lashing. The ancient arms of a celebrated grammar-school in England represent a schoolmaster in the act of flogging his pupils, with a text of Scripture underneath as a motto—*He that spareth the rod hateth the child.* These armorial bearings, I need scarcely observe, are most appropriate; and the generality of schoolmasters, I am sorry to say, have proved themselves well entitled to assume them.

But I rejoice to tell you that this cruel and absurd system is no longer countenanced nor tolerated by the public; and that teachers who still think it necessary to govern their pupils by fear and severity, rather than by kindness and reason, are considered ignorant of the art of teaching, and, of course, unfit for their office.

One word let me add—never correct, for correction will be sometimes necessary, till you have tried all other means in vain, such as persuasion, remonstrance, reproof; and when you do correct, *never do it in anger.* If this rule be not strictly observed, the only object which can render correction justifiable is defeated; for you will have the appearance of punishing your pupils, not for their profit, but for your own pleasure. This you may consider difficult, almost impossible, but it is the force of habit that leads you to think so. The office of a teacher is indeed a most trying one, and few can discharge the duties of it without at times showing a little impatience, and even anger—*But be angry and sin not;* that is, do not act upon the suggestions of anger. If you do, your act will not only be wrong, but the act of a madman; for anger is madness while it lasts. It is very hard, such is our weakness, to correct a child unless we *feel* displeased with him; and those who do it cool and unmoved are, by unthinking persons, said to be cruel. But if correction be absolutely necessary, it is being cruel only to be kind. In fact, it is only those who correct in anger that are cruel, and cruel to no purpose; for correction, in such a case, is useless, and worse than useless. Is a judge angry when he directs an offender to be punished? or is he considered cruel because, calm and unmoved, he orders the most severe punishments to be inflicted? And are the faults of children less pardonable than the crimes of malefactors?

I had purposed to quote for you the opinions of several great and good men on this subject, including the philosophic Locke, but time will not permit. To show you, however, that this plan is neither new nor impracticable, I will read you a few sentences from "Roger Ascham's *Schoolmaster*." This book was written two hundred and seventy years ago, and certainly nothing more to the purpose has been published since.

"Schoolmasters many times punish rather the weakness of nature than the fault of the scholar, whereby many scholars be driven to hate learning before they know what learning meaneth; and so are made willing to forsake their books, and be glad to be put to any other kind of living.

"The school should be, indeed, as it is called by name [alluding to the original meaning of the term *school*] the house of play and pleasure, and not of fear and bondage, and so I think Socrates said.

"If your scholar do miss sometimes, chide not hastily, for that shall both dull his wit and discourage his diligence; but monish him gently, which shall make him both willing to amend, and glad to go forward in love and hope of learning. For commonly many schoolmasters, some as I have seen, more as I have heard tell of, be of so crooked a nature, as when they meet with a hard-witted scholar, they rather break him than bow him, rather mar him than mend him. For when the schoolmaster is angry with some other matter, then will he soonest fall to beat the scholar, though there be no fault in his scholar to deserve it. These you* will say be *fond* schoolmasters, and few they be that be found to be such. They be indeed *fond* schoolmasters, but surely over many such be found. But this I will say, that even the wisest of your great beaters do as often punish nature as they do correct faults. Yea, many times the better nature is the sorer punished."

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* *We* would not say that such schoolmasters were '*fond;*' but *fond* in this sentence means *foolish*.

He thinks "a dull wit" generally makes the best scholar, if, as he quaintly adds, "it be at first well handled by the mother, and regularly smoothed and wrought, as it should, not overthwartingly and against the wood, by the schoolmaster."

> "But when such a child," he continues, "comes to school, he is smally regarded, little looked unto; he lacketh teaching—he lacketh encouragement—he lacketh all things, only he never lacketh beating, nor any word that may move him to hate learning, nor any deed that may drive him from learning to any other kind of living."

The TENTH RULE is—*To discountenance quarrelling, cruelty to animals, and every approach to vice.*

Boys particularly, I need scarcely observe, have a propensity to quarrel and fight with each other; and though there is little of malice or bad feeling in their contentions, yet the propensity is a dangerous one, and should be eradicated in time, otherwise it will grow with their growth, and strengthen with their strength, and eventually lead them on to cruelty and crime. It is this propensity, unchecked by education, and increased and confirmed by habit, which leads to the faction fights and outrages which disgrace our country and our name.

Cruelty is almost the only thing for which I would punish a child, but not unless he repeated the offence after due admonition; for it is more for want of thought, or rather for want of being told, that most children are cruel. Awaken their sensibilities—excite their sympathies,—show them the cruelty and the *sin* of torturing or killing innocent or harmless insects, and of beating or annoying the animals which Providence has placed under the *protection* as well as under the power of man. Teach them that nothing has come into this world of itself—that the great Author of nature has called even the most loathsome creatures into existence for some wise purpose—and that therefore it is a *sin* to deprive any thing of life *unnecessarily*. Teach them, too, that the smallest thing that moves is as sensible to pain as they are themselves,—that in the language of the Great Poet—

> "The poor beetle that we tread upon,
> In corporal sufferance feels a pang as great
> As when a giant dies."

The poet Cowper, too, has some very feeling and beautiful lines on this subject. You will find them in the Fourth Book of Lessons, under the head of "CRUELTY TO ANIMALS;" and I will conclude my observations on this rule by recommending you to make every boy in your schools commit them to memory, and frequently repeat them.

The ELEVENTH RULE is—*To record in the School Register the amount of all grants made by the Board, and the purposes for which they are made.*

And the TWELFTH and last RULE is—*To take every possible care of the* FREE-STOCK *of books granted by the Board; and to endeavour to keep the school constantly supplied with National school-books and requisites for sale to the children, at the reduced prices charged by the Commissioners.*

As you have not had the benefit of Dr. Macarthur's instructions on the art of teaching, I will read to you an extract from the preface of the admirable little book called "Easy Lessons on Money Matters," most of which have been published in the National school-books. The distinguished Author* in the preface of the book referred to, says, "The following extracts, written by an experienced and intelligent schoolmaster, contain a specimen of the mode in which he would examine children in these lessons." That Dr. Macarthur is the experienced and intelligent person referred to, I have no doubt, because I have often seen him practising with success the directions here given. These directions have a special reference to the mode of teaching the "Easy Lessons on Political Economy" in the National School Books, but an intelligent teacher can easily apply them to all the Lessons.

* Archbishop Whately.

EXTRACT CONTAINING DIRECTIONS FOR TEACHING.

"The children ought to be made acquainted with the subject about which they are reading, as far as the lesson goes; but this is by no means all that ought to be done: every word almost in the lesson may be made use of to recall what the pupil has previously acquired, whether it be geography, history, or grammar, &c.

"Nothing disheartens children so much as turning them back; and there is no necessity for it. Suppose, a week or a fortnight after the *Lesson on Commerce* is passed, I wish to refresh their memory on it, I need not tell the class to turn back and read the lesson over again; but I take advantage of meeting with the word *ship*, or *tea*, or *water*, or indeed any word that affords an opportunity of recalling the lesson.

"A judicious teacher might so modify his manner of teaching this lesson as to make it instructive either to a child of six or a boy of sixteen. In the one case, when I came to the word *orange*, I might say that the world is round like an orange. In the other, I might ask the species, and natural history of the orange-tree.

"QUESTIONS IN THE LESSON ON COMMERCE.

"Do you recollect what we were reading about in the last lesson?—Very well; about Exchanges. And what is this lesson about?—Right; but do you know the meaning of the word Commerce?—Look at the first two lines.—Yes; it means exchange among different nations. You remember we were shown in the last lesson, that it would be a bad plan for the shoemaker to make chairs and tables for himself, or for the joiner to make himself shoes.

"Did you ever see oranges growing?—I dare say not; they do not grow in this country. How is it that we happen then to have oranges?—Certainly, we get them from the countries where they grow; but where do they grow?—Right; show me Portugal on the map. Does Portugal lie to the north or south of us?—South: remember that. The countries south of us are warmer than our country, and the best fruits grow in warm countries;—grapes grow in this country, and figs in this; you see they are both south of us: [pointing to them on the map.] Let each boy mention a fruit;—begin, top boy;—that will do. Do you think the Portuguese will give us their fruit without any thing in exchange?—No; we send them cloth, or any other article they may wish for, and they send us oranges; and this is commerce.

"Show me whence we get cotton?—Yes; name it. Right. Who discovered America?—Right; he discovered it in the year 1492. How long is it since that? What is a hundred years called?—Century. An animal with a hundred feet?—Centipede. Captain of a hundred men?—Centurion. Recollect now, that *cent.* means hundred. Five per cent. means five pounds for every hundred. But what year did I say that the New World was discovered in?

"Now for tea and sugar; are they animal, vegetable, or mineral substances?—Yes; they are vegetable substances. Look round the room, and tell me what vegetable substances you see, &c. &c. What part of the plant is tea?—What sugar? You have seen the steam rising out of a pot or kettle—that is, the water going off—now the juice of the cane is boiled till all the water in it goes off in steam or vapour. From what country do we get tea?—Yes; show me China on the map. The people are called Chinese. What a useful thing commerce is! Is it not a pity that we should be separated from China and America by water? Would it not be better if we had a road all the way?—You think it would. Take care now; look at the book, and tell me what the person thought who wrote this lesson.—Yes; he says that water is useful for commerce.—But why does he think so?—The ship can carry more than a horse can draw. Can the next boy give me another reason?—Very well; the ship does not need food or rest like the horse: these are very good reasons for saying that water is useful for commerce. Can you tell me what your reasons were when you said that the roads would be better than water? Think a little. You would be afraid of being drowned, would you? Very well, I see you are thinking now.

"Don't you think it a good plan for the Americans and the Chinese to prepare sugar and tea for us, since they do not grow in this country; and for us to make cloth, and knives, and scissors for them, since we can make such things better than they can?—I think that industrious people in other countries are almost as useful to us as the baker or shoemaker who lives in the same city with us.

"Don't you think it very foolish for different nations to quarrel and fight, and refuse to trade with one another? God has made other countries useful to us, and has made us useful to other countries. Did not God mean to show us by that arrangement that we ought to live in peace with one another, and to assist one another?

"Here is a small ship; begin at the head of the class, and let each boy tell me something about it: helms, sails, &c. &c. Let each boy tell me something that he has learned from this lesson.—First boy: We get tea from China; the people in China are called Chinese; Columbus discovered America; we get figs from Turkey; the best fruits grow in warm countries; this is Portugal; cent. means a hundred; Portugal lies to the south of us; a hundred years is called a century; the helm turns the vessel, &c. &c.

"I find it very difficult to convey an idea how I think a class ought to be taught; so much depends upon the look, the tone, the animation of the master in keeping the children in good humour and on the alert. The teacher ought to *show* every material object mentioned in the lesson.

"Children will look with interest upon sugar when they are reading about it, though perhaps they see it every day of their lives. The powers of association may be very much cultivated, and, of course, the memory assisted by a judicious mode of examination. Sugar,—Jamaica,—Columbus,—1492,—Henry VII.,—&c., may be so connected in the mind, that, ever after, the one will suggest the other."

MONITORIAL OR MUTUAL INSTRUCTION.

LECTURE DELIVERED TO THE SUPERINTENDENTS OF THE NATIONAL SCHOOLS.

In my late lecture to the teachers, as you are aware, I dwelt a good deal upon the popular prejudices against the Monitorial or Mutual Instruction System; and I showed, as you will recollect, how those prejudices have been increased and confirmed by the injudicious, imperfect, and objectionable manner in which this system was introduced and worked by the generality of teachers; particularly by the inferior class of teachers trained by other societies.

In this lecture, I intend to enter into the advantages and defects of the system itself; but before doing so I shall give you a brief history of its origin. This leads me to notice the rival claims of Dr. Bell and Joseph Lancaster. Dr. Bell was, undoubtedly, the first person who brought the Monitorial or Mutual Instruction System under the notice of the public. In a pamphlet, published in 1797, entitled, "An Experiment in Education, made at the Male Asylum of Madras, suggesting a system by which a school or a family may teach itself, under the superintendence of the master or parent," he detailed his method, and concluded by recommending its introduction into the schools for the education of the poorer classes in these countries. Dr. Bell's, or, as it is usually called, the Madras System, was, it appears, shortly after the publication of his pamphlet, introduced, with some modification, into St. Botolph's Charity School (the oldest of the kind in London), and was found to work well; but little more was heard of him or his system till after the appearance of his rival, the celebrated Joseph Lancaster. This extraordinary man had long been devoting his time and his energies to the education of the children of the poor; but it was not till five years after the publication of Dr. Bell's pamphlet that he came before the public. I shall introduce him in his own words. In a pamphlet, published in 1803, entitled "Improvements in Education," he states:—"I ought not to close my account without acknowledging the obligations I lie under to Dr. Bell, of the Male Asylum at Madras, who so nobly gave up his time and liberal salary that he might perfect that institution, which flourished greatly under his fostering care. He published, in 1797, a tract, entitled, 'An Experiment on Education, made at the Male Asylum at Madras, suggesting a system whereby a school or family may teach itself, under the superintendence of the master or parent.' From this publication I have adopted several useful hints; and I beg leave to recommend it to the attentive perusal of the public friends of the education of youth. I am persuaded that nothing is more conducive to the promotion of a system than actual experiment. Dr. Bell had two hundred boys who instructed themselves, made their own pens, ruled their own books, and did all that labour in a school, which among a number is light, but resting on the shoulders of the well-meaning and honest, though unwise teacher, often proves too much for his health, and embitters, or perhaps costs him his life. I much regret that I was not acquainted with the beauty of his system till somewhat advanced in my plan; if I had known it, it would have saved me much trouble and retrograde movements. As a confirmation of the goodness of Dr. Bell's plan, I have succeeded with one nearly similar, in a school attended by almost three hundred children."

The school to which Lancaster alludes in this passage is the Borough-road School, in the vicinity of London, which was established through his exertions in 1800, and is still considered the largest and best of the class in Europe. The novelty and success of the method of instruction pursued in this and some other schools in the vicinity of London, brought Lancaster and his system into such repute, that Lancasterian schools, as they were called in honour of the founder, began to spring up in almost every town in England.

The success and celebrity of Lancaster recalled public attention to the claims of Dr. Bell. His friends insisted that the merit of the invention entirely belonged to him, and that Lancaster was a mere copyist. The friends of Lancaster, on the other hand, while they admitted that Dr. Bell had first brought under the notice of the public a similar plan, asserted that Lancaster had been, for a considerable time before, engaged in constructing and experimenting upon his system; which, they also asserted, was different in many respects and far superior.

But it was not so much the prior claims of Bell or Lancaster to originality—nor the superiority of this or that system, in a *literary* point of view—that led their friends and the public to enter into the controversy with a warmth and spirit which a mere literary question never could have produced. The question became a *religious* or *sectarian* one, and it was debated with all the zeal and animosity which such questions usually call forth. Bell, himself a churchman, naturally wished to connect his system with the church, or, as he expresses it, "to be established under the most sacred auspices"—meaning His Grace the Archbishop of Canterbury and the Episcopal Bench; and in accordance with this, it was recommended that the schools should be placed under the exclusive superintendence of the Protestant parochial clergy. Lancaster, on the other hand, a dissenter from the established creed, invited the clergy and laity of all denominations to co-operate in the management of his schools. This led the clergy, who consider themselves the natural and *legal* guardians of the education of the people, to regard the scheme of Lancaster as an invasion of their rights; and therefore they exerted themselves to establish, in almost every parish, schools on Dr. Bell's system, which they called *National*, in opposition to the *Lancasterian* Schools, which they regarded as schismatic or sectarian. The National Schools in England, I may observe, are similar to the Association for Discountenancing Vice Schools in this country. They are under the exclusive management of the Protestant parochial clergy; and all the children attending them are obliged to learn the catechism of the Established Church, and to attend the church service. But the Lancasterian, or as they are usually called the British and Foreign Society Schools, may be compared to the *National*, and even the Kildare-place Society Schools in this country, both with regard to the management of them and the liberal principles on which they are established. For instance, one of the fundamental rules of the British and Foreign Society is, "*that their schools shall be open to the children of all denominations, without distinction, and that no catechism peculiar to any religious sect shall be taught in them.*" But it is the *literary* merits of these rival systems that claim our attention, not the religious regulations which were superadded to them, and which, in fact, caused almost all the controversy. The Monitorial or Mutual Instruction method, is the basis of both their systems, and each claims the honour of inventing it. The praises of their friends and followers were most extravagant. Colquhoun, in his pamphlet on Popular Education, thinks that Dr. Bell deserved a public statue in honour of the invention; and Dr. Bell himself seems to coincide with him; for after making the most of it, he concludes one of his pamphlets by stating that he "is fearful of being wanting to his own discovery."* Lancaster, too, in one

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* Dr. Bell describes his system in his MANUAL as—

"An event which has no parallel in the history of the moral and intellectual world,—an event calculated to give a new character to society at large.

"At the latter end of the last century the ingenious and elegant author of Elements of Criticism, says—'What, if men of genius were encouraged, by suitable rewards, to give us good systems of education.' Now, without such encouragement, or any other, has a discovery been made of a system of education, of which Lord Kaimes could have had no conception—a discovery which has given to the *Ludimagister*, as it were, the of his publications, claims the credit of the discovery; "having *invented*," he states, "under Divine Providence, a new and mechanical method of education, for the use of schools, he feels anxious to disseminate the knowledge of its advantages through the United Kingdom."

But in what does the invention consist? Dr. Bell tells us, over and over again, "that his system consists in the mode of tuition by the scholars themselves." But is this an invention?—and if so, is Dr. Bell the inventor? The following passage from Plutarch proves that the invention—if invention it can be called—belonged to Lycurgus, who, it appears, established a similar system of education in Sparta. The Spartan boys, it is true, were taught very different and much more difficult lessons than the children in our schools; but as they were taught and governed by the elder and more advanced boys, the Spartan and Madras systems were the same in principle; for, according to Dr. Bell, "wherever the scheme of tuition by the pupils themselves is followed, there is the Madras system."

"Lycurgus," as Plutarch informs us, "committed the superintendence of the youth of the state to one of the most worthy men of the city, and placed over the class of boys the most intelligent and *bravest* of the *irens*. Those called irens," he continues, "are two years older than the class of boys, and *melirens* are the eldest of the boys."

"The business of the irens was, to put such questions

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hundred eyes of Argus, the hundred hands of Briareus, and the wings of Mercury.

"It has given to the intellectual operations and the education of youth such immense powers, as the mechanical engines have given to the physical strength of man. Even the steam and locomotive engines admit of no comparison with the new school and its self-moving engine. It may be called the STEAM ENGINE of the MORAL WORLD. It is the *lever of Archimedes* transferred from matter to mind.

"To the moralist and divine, the statesman and politician, the sovereign and legislature, it furnishes an instrument more powerful than ever yet has been wielded."—*Bell's Manual*, p. 15, &c.

as required judicious answers, as—Who is the best man in the city? What do you think of such an action? The answer was required to have a reason assigned, and a proof, in few words. He whose account of the matter was wrong, by way of punishment, had his thumb bitten by the iren. The old men and magistrates often attended these little trials, to see whether the iren exercised his authority in a proper manner. He was permitted, indeed, to inflict the penalties, but when the boys were gone, he was to be chastised himself if he had punished them with too much severity or remissness."

Now, as the *irens* and *melirens* of Lycurgus are evidently the prototypes of the *monitors* and head-monitors of Dr. Bell, the Madras method, which consists chiefly in the tuition and government of the scholars by the more advanced boys, cannot be regarded as an invention, but rather as an imitation and modification of the Spartan system. Of course, this is the only point of resemblance between the Madras and Spartan systems; but, according to Dr. Bell, it is the cardinal point or principle on which this system rests; for he tells us over and over again, that the Madras method consists simply in the tuition and government of the scholars by themselves.

Nor was the practice confined to Sparta. It appears from Xenophon's Cyropedia, that it was customary in the Persian schools to place the younger boys under the care and control of the elder.

Nor could the Monitorial method have been regarded as a great innovation in Madras; for it has been ascertained that the mere form was employed in the East long before Dr. Bell's time. *Pietro delle Valle*, who travelled in the east in the year 1623, speaks of its existence; and Dr. Bell himself tells us that he observed, on his first visit to a Malabar school, the children tracing letters, and learning to write on sand.

To come nearer home, it appears that the system of teaching and governing the scholars by themselves was known and practised in France long before the establishment of the Madras school. In 1747, M. Herbault, director of the Hospice de la Pietié, opened a school for the education of three hundred poor children, into which this system was formally introduced, and successfully acted upon during the life of the benevolent founder.* And in 1780, the Chevalier Paulet established a similar institution for the education and support of two hundred destitute children, chiefly the orphans of officers, who not only mutually instructed each other, but also managed the domestic affairs of the establishment. This school flourished for about eight years, and was broken up at the Revolution, ending the same year that the Madras school commenced. The mode of punishment devised by the benevolent founder of this school deserves mention. Corporal punishment was entirely banished from it, and the pupils were governed solely by principles of honour and emulation. Instead of making the school a prison, and learning a punishment, by confinement after hours and double lessons, his mode of punishment consisted in exclusion from the school and prohibition from study. This mode of punishment was found to be as efficient in practice as it was ingenious and philosophical in conception. It is worthy of remark, that the celebrated Marshal Macdonald was educated in this school.

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* About the year 1780 the Chevalier Paulet, an officer once in the French service, but descended from a British family, if not himself a Briton, in going through the wood of Vincennes, was attracted by the screams of a child toward a hole where it lay in a most miserable condition. Mons. Paulet took it home with him, and resolved to take care of it. In a few weeks the child informed his benefactor that he had three little friends almost as wretched as himself, and requested that they might be permitted to partake of his good fortune. The chevalier consented; and the noise of his generosity having spread abroad among the children of the neighbourhood, he soon found himself surrounded by two hundred, whom he formed the project of educating. To this end he divided them into classes, with each a captain at its head, and a general staff to superintend the whole. He excluded all corporal punishments. The principal correction he inflicted was condemning them to remain idle, and this awful sentence was graduated into what he termed *petite oisiveté* and *grande oisiveté*. THE CHILDREN TAUGHT EACH OTHER. All the domestic concerns of his large family were attended to by each in rotation. Rewards and punishments were distributed, upon mature investigation and deliberation, by a jury of school-fellows. Regular records were kept of every occurrence by the chevalier himself. The noble adage of his heart was—"*If they cannot all be great men, they may all be good men.*"—*Edin. Review,* vol. xxxiii. p. 489.

The Madras system, then, if it consists merely in the tuition of the scholars by themselves, is not an invention; nor is Lancaster's, though he includes in his mechanical processes and arrangements. Both Bell and Lancaster, however, deserve the highest praise for their exertions and sacrifices in the cause of popular education; and in those exertions, and in those sacrifices, their chief merit consists. Dr. Bell, as we have seen, gave up the greater part of his property to promote popular education; and poor Lancaster, having no property to give up, devoted his entire time, and, I may say, his life to the cause. To them too belongs the credit of producing in the public mind an impression in favour of popular education, and a desire to extend and improve it, which continues to this day. Nor was the impulse given by their efforts to popular education confined to these countries. Almost every country in Europe felt, and still feels it.

Both Bell and Lancaster were, as was natural, enthusiastic. The former used to say, "Give me four-and-twenty children to-day, and I will supply you to-morrow with as many teachers." And Lancaster was equally visionary. Nor is this surprising, for their friends, and even the public, entered into their views with almost equal enthusiasm; and Bell and Lancaster, and Lancaster and Bell, were for a time, in almost every circle, the constant subject of conversation. In fact, the introduction of the Mutual Instruction system was regarded as a new era in education; and, like other novelties, it attracted, for a time, an undue share of the public attention. But its *novelty* has passed away, and sober experiment has put its pretensions to the proof; and I need not add, that the extraordinary results expected from it never have—nor never can be realized. But though the extraordinary results which the enthusiasm of Bell and Lancaster led their friends and followers to expect from the Mutual Instruction system have never been realized, yet it has done much to extend, systematize, and improve popular education.* Though children cannot be taught without teachers, nor learn to read without books, nor write without paper, yet many of the contrivances and arrangements of Bell and Lancaster have proved in the highest degree useful.

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* Some of their arrangements, however, were very injudicious. Lancaster's system of *rewards* and *punishments* was particularly objectionable. For instance, "It is no unusual thing with me," he says, "to deliver one or two hundred prizes at the same time. And at such times the countenances of the whole school exhibit a most pleasing scene of delight; as the boys who obtain prizes commonly walk round the room in procession, holding the prizes in their hands, and *an herald* proclaiming before them.—These good boys have obtained prizes for going into another class. The honour of this has an effect as powerful, if not more so, than the prizes themselves. A large collection of toys, bats, balls, pictures, kites, are suspended over head, beaming glory and pleasure upon the school beneath.

"When a boy gets into a singing tone of reading, the best mode of cure that I have hitherto found effectual, is by force of ridicule. Decorate the offender with matches, ballads, (dying speeches if needful,) and in this garb send him round the school, with some boys before him crying matches, &c., exactly imitating the dismal tones with which such things are hawked about London streets. I have always found excellent effects from treating boys who sing or tone in their reading, in the manner described. It is sure to turn the laugh of the whole school upon the delinquent. It provokes risibility, in spite of every endeavour to check it, in all but the offender.

"When I meet with a slovenly boy, I put a label upon his breast, I walk him round the school with a tin or a paper crown upon his head." Boys with dirty faces had them washed by little girls before the whole school, 'who accompanied their ablutions with a gentle box of the ear!' Boys with dirty hands were sometimes obliged to stand before the school with their fingers in each other's mouths!! Again, "it is very seldom that a boy deserves *both a log and a shackle* at the same time!" Most boys are wise enough *when under* one punishment, not to transgress immediately, lest it should be doubled."

These disgusting and degrading modes of punishment were soon discontinued even by Lancaster himself.

Before I enter into the advantages and defects of the Monitorial method, which is common to the systems of both Bell and Lancaster, and which, in fact, constitutes the foundation of each, I shall state briefly some points of difference in the arrangements. Bell recommends children to be taught to write by tracing the characters on sand with the fingers, while Lancaster prefers, for the same purpose, the use of slates and pencils. Again, Bell put into the hand of every pupil a *small* card, containing his lesson; while Lancaster had *large* cards, or tablet lessons, arranged round the walls, and made one serve an entire class. Bell always selected the *best* boys for monitors, while Lancaster held it advantageous sometimes to appoint the most *mischievous*. Their methods of teaching the alphabet, reading, and arithmetic, also differed in some respects.

Lancaster drilled and divided the letters of the alphabet into squadrons and groups, according to their resemblance, real or supposed, to geometric figures; and Bell introduced what is called the *syllabic* method of reading, which consists in making beginners pronounce the words *syl-la-ble* by *syl-la-ble*, and sentences word by word, pausing at each. This method, it has been stated, has, generally speaking, led the pupils of the National Schools to excel in reading, while the scholars of the Lancasterian Schools are considered superior in their knowledge of arithmetic. But though sand-writing, small cards, and syllabic reading, properly belong to the National Schools, and slate-writing and large cards, or tablets, to the Lancasterian, yet these distinctions are not always kept up. Slate-writing and tablets, or large cards, are now very generally substituted instead of sand-writing and small cards in the National Schools.

It is worth remarking, that the ingenious and economical methods of teaching the alphabet, writing, and arithmetic, introduced by Bell and Lancaster, have as little claim to be called *inventions* as the tuition and government of the scholars by themselves. Dr. Bell himself tells us, that he was struck on his first visit to a Malabar school, by the practice of making the scholars trace and learn their letters in sand; and Tennant informs us, that in a school at Rohilcund, he observed that each boy had a black board, like a slate, on which he copied letters with chalk, and that thus while he learned to write the characters, he learned their names also. And in Shaw's travels in Barbary and the Levant, published in 1739, (about a hundred years ago,) the following passage occurs (page 262)—"When the Moorish and Turkish boys (for there is little or no education among the Bedouins) are about six years of age, they are sent to school, where they learn to read, to write, and repeat at the same time. They make no use of paper, each boy having a thin square board to write upon, which being only slightly daubed over with whiting, may be wiped off, or renewed at pleasure. After they have made some progress in the Koran, the principal book that is taught them, they are initiated, with like care into the several ceremonies and devotions of their religion; the master receiving from each boy for his trouble and attendance, about a penny a week." As I have followed them so far, I may add, that he states that, except those who can get employed in collecting the tribute and customs, they soon forget all that they learn at school.

The mechanical method of teaching the rudiments of arithmetic by small balls, movable on wires fastened in a frame, is not new.* Duhalde and Barrow speak of, and the latter gives a delineation of a similar machine which is used for the same purpose in China. It is called the *swam-pan;* and might be called the *Ready Reckoner* of the Chinese, for it is used more in practice than in theory. Barrow tells us that it is in universal use, from the man of letters to the meanest shopman behind his counter. In the publication called "The Chinese," by the Society for Diffusing Useful Knowledge, you will find a delineation of the *swam-pan*, or, as it is called there, the *suân-pân*, or calculating-dish. It is described as having balls of wood or ivory strung upon wires in separate columns, of which one column represents units, with a decimal increase and diminution to the left and right, as in our system of numeration. The Chinese calculating-dish is used for more complicated calculations than ours; but the similarity of their form, and the *mechanical principle* of each, point out their identity.

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* This is Pestalozzian. See Lecture on his System.

But we are more concerned with the *utility* than with the originality of these contrivances. If not invented by Bell or Lancaster, they were, at least, organized, improved, and systematized by their labours, and, consequently, to them the chief credit is due. We shall therefore pass on to the utility of these contrivances, beginning with the alphabet. There is little or no necessity for drilling and dividing at least the *capital* letters of the alphabet into ranks and groups, for the purpose of enabling children to learn them more easily. The easiest way to teach the capital letters is, not to teach them at all; I mean, they need not be taught as a lesson, but merely hung up for show in the school-room. If we cannot smooth the rugged path of learning for children, we should at least throw no unnecessary difficulties in their way. And to make children learn and recollect the names and forms of the capital letters, before they can proceed a single step, is a great and unnecessary difficulty thrown in their way. The difficulty to a child must be great. If we doubt it, let us try what trouble it would cost ourselves to learn and recollect the names and forms of four-and-twenty characters or figures which we never saw before. And the difficulty is unnecessary, because the *capital* letters are not required either for learning to spell or to read. It is of the *common* letters that words and sentences are composed. The *capitals* occur only one at a time, and perhaps not more than one in a page, and will be learned by children as they proceed, without any formal teaching. There is no necessity then for the ingenious contrivances of Lancaster and others for teaching, at least, the capital letters of the alphabet, by dividing them into right and acute angled, curved, and perpendicular. To teach a child by geometric comparisons is, I conceive, preposterous, and calculated to increase the difficulty; for, if I tell him that the first letter of the alphabet, for instance, is formed by two inclined lines and a horizontal one, what is he the wiser? The Irish Schoolmaster's *gable-end* comparison of the same letter, "Great A," though a less learned, is certainly a much easier, and therefore a much better one.

The *common* letters, however, must be learned; but there is no necessity for such contrivances even to teach them. No easier, and, therefore, no better plan can be devised than the method adopted in our First Book of Lessons. Instead of distracting the minds of children by obliging them to learn and recollect the names and forms of all the letters before they can advance a single step, they are taught only two or three at a time, and with their names they are taught their uses also; which plan renders their lessons not only easy, but practically interesting.—So much for the alphabet.*

The next improvement was the substitution of *card* lessons by Bell, and *tablets* by Lancaster. Such substitutions are more economical, and therefore preferable, particularly in schools established for the education of the poorer classes. Besides, the tablet lessons answer better than books for instructing children in large classes. When the master or monitor points to the tablet, the eyes and attention of the whole class are at once fixed upon it; and no time is lost or confusion occasioned by the dropping of books or the losing of places, which, in a large class of children is almost unavoidable. But though tablets are better than books for *hearing* junior classes their lessons, yet every child should be provided with a book for the purpose of preparing his lessons before he comes up to say them in classes round the tablet. Children, too, should always be required to prepare lessons at home, and this they cannot do without books. Besides the advantage of this, it is rendered necessary by the universal desire of parents, who, naturally enough, think that their children are learning little or nothing if they are not required to prepare lessons at home. In fact, it was this feeling which, perhaps more than any other, led the peasantry to prefer common hedge-schools to the Lancasterian and even Kildare-place Society schools. From the hedge or country schools the children always brought home their books, such as they were, for the purpose of getting tasks, which was a proof to their parents, particularly if unable from ignorance to examine into their progress themselves, that the master was keeping his scholars to their learning both in school and out of it. But from the Lancasterian and Kildare-place Society schools they brought home no books for the purpose of preparing lessons. In the former, indeed, they had no books to bring home, as tablets alone were used, and only one perhaps among a dozen of children; and in the Kildare-place Society schools they had the use of the books only during school-hours. The same objection, I am glad to say, cannot be made to the National Schools; as there is, or always should be, in each of them, an adequate stock of National School books for sale to the scholars, at half first cost, even the poorest class of parents can provide their children with books with very little difficulty.

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* See Appendix, for a new method of teaching the alphabet.

Writing on sand or slates instead of paper is a more economical method, and therefore preferable, particularly in schools for the education of the poorer classes. But more, perhaps, is lost in time than is gained in economy; for writing on sand with the finger, or even on a slate with a pencil, does not enable a child to write on *paper*, which is the great object in view. Besides, paper is now so cheap, particularly in the National Schools, in which children may purchase it at the rate of *three-pence* a quire, that the *practical* advantage gained by writing on it more than counterbalances the expense saved by the substitution of sand or slates. Slates, however, may be used with advantage by the younger children. Though forming letters on a slate with a pencil cannot advance the art of writing, compared with practising with a pen on paper, yet it amuses children, and keeps their attention engaged, which is certainly a very great advantage. The facility of correcting imperfect attempts at forming the characters is an argument for learning to write on slates; but, not to speak of the injury done to the hand by the use of a *stiff* pencil, children will take more pains, and therefore make more progress, when writing on paper, because they know there is no room for correction—that what they once write must remain, not only for the inspection of the teacher, but their parents also. Writing on slates, therefore, except for the purpose of amusing children, and keeping their attention engaged, is, I conceive, now that paper can be had for three-pence a quire, no advantage; for, as I said before, more is lost in time than is gained in economy.*

I shall now pass on to the Monitorial or Mutual Instruction system. The best argument in its favour is, that it brings, by the economy of its machinery, the common branches of education within the reach of the very poorest classes in the community. It enables one person, properly trained, to teach hundreds of children the rudiments of the common branches of education. This is a great advantage to the poorer classes; for the more pupils a teacher has, the less payment he can afford to take from the parents of each. The monitorial system, therefore, *cheapens* education. It also *expedites* and *extends* education by enabling children to go through the usual school course in a much shorter time. This is another great advantage to the poorer classes, whose necessities compel them to limit the schooling of their children to the shortest possible time. Under the old plan, the children of the poor had scarcely time to learn to read before they were called away to labour for their living; but in the same time, under the monitorial system, they may add to their reading a knowledge of writing and the rudiments of arithmetic. Where there is but *one* teacher, even in a small school, a great deal of time must of necessity be lost by the children; for even in the smallest school there are several classes, which, as the teacher cannot divide himself, he must attend to in rotation; and, consequently, all the other children, except the few round his desk, are left to idle away at least two-thirds of their time, under the name of preparing their lessons. But under the monitorial system every child is kept at work, and every minute is turned to account. In short, under the monitorial system, even in a school of four classes, thrice as much time is available for the actual instruction of each pupil; for, supposing the master to give an equal portion of time to each of the four classes, he could only be one-fourth of the day with each.

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* See the Appendix, for a new method of teaching to write.

Again, the *order*, *discipline*, and *subordination*, which the monitorial system requires from, and *habituates* children to, must have the happiest effects on their after life. Such habits, I need scarcely observe, are the most useful lessons that can be taught the children of the lower classes; and such lessons they cannot miss learning if educated for three or four years at a systematic and well-conducted monitorial school.

Another advantage attending the monitorial system is, that by relieving the master from the drudgery of hearing tasks and repetitions, and of teaching the mere elements of education, it enables him to devote his time and his energies to the instruction of the more advanced scholars in the higher branches of education. Again, this system is calculated to raise up a new and superior class of teachers; for many of the monitors will naturally follow teaching as a profession, and from their long training and habits of order and discipline, excellent teachers they must make.

But notwithstanding the advantages derivable from the *monitorial system*, it never has been popular with the parents of the pupils. It is true they are not the best judges, but they feel the greatest interest, and they certainly have a voice potential in the matter. Their prejudices, which in general arise from their ignorance and selfishness, have been increased and confirmed, as I showed in my late lecture, by the injudicious, imperfect, and objectionable manner in which it was introduced and worked by the generality of teachers. But even if well worked, it seldom finds favour in the eyes of parents, who very naturally object that their children should teach or be taught by other children. It is almost impossible to persuade them that justice can be done them if taught by monitors; or that, if monitors, they do not lose their time by teaching others, instead of being taught themselves. Besides, it hurts their pride—for pride descends even to the lowest classes—to have their children instructed and *governed* by the children of their neighbours.

But this system has been objected to even by more competent and less prejudiced judges. The German educationists have denounced it as a kind of steam-engine process, got up in England for the purpose of stamping the lower orders with a superficial and *mechanical* system of education; and, except by a large party in France,* it is now repudiated all over Europe.

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* The zeal and animosity displayed by the advocates of the rival systems of education in France, "*l'enseignement mutuel*" and "*l'enseignement simultané*," would be quite inexplicable, did we not know that they are the names of two parties. Louis Philippe, while Duke of Orleans, and for a year or two after he became King of the French, was the great patron and promoter of the mutual instruction system. He has since, however, given unequivocal proofs of his preference of the simultaneous system; and there can be little doubt, I think, of the speedy decline of the monitorial schools in France as well as in Germany. In the following extract from the report of the "*Société pour l'instruction elémentaire*" for the year 1835, he is accused of striking at the root of the mutual instruction system by the enactment that decrees that all the French primary schools shall be divided into *three classes*, according to the age and proficiency of the children. It will be seen that the fact of his having been a schoolmaster himself is referred to, though it is not expressly said that his school was a *monitorial* one.

"*Sur les actes et l'esprit du ministère de l'instruction publique, en ce qui touche l'instruction primaire et spécialement l'enseignement mutuel.*

"La réponse à la députation de la Société de Paris pour l'enseignement élémentaire, faite par le roi, immédiatement apres la révolution de Juillet, n'est pas la seule preuve que nous puissions fournir de sa prédilection constante pour l'enseignement mutuel. Un an plus tard, voyageant dans les provinces de l'Est, il répondait à la Société d'encouragement de Mirecourt: 'Le développement de l'enseignement primaire et *mutuel* est la base de la félicité publique. Je ne saurais trop vous recommander cet objet, ainsi qu'à M. le préfet. Plus les hommes sont éclairés, plus ils sont sages et amis de l'ordre. C'est le meilleur moyen d'assurer la tranquillité du pays. Quand le gouvernement est essentiellement national, il ne peut leur demander que ce qui est dans leur intérêt. Lorsqu'ils le comprennent bien, tout devient facile, car c'est alors que tout se réunit pour concourir à la prospérité générale.'

In fact, the instruction communicated by this method must necessarily be of a *mechanical* character, as it is

"Le roi répondait encore au comité d'instruction primaire de Troyes : 'La loi sur l'enseignement public est actuellement soumise à la délibération des comités, afin qu'elle puisse être présentée aux Chambres à la session prochaine. Vous devez être certain que mes efforts tendront à faciliter votre tâche, à propager l'enseignement *mutuel*, ce grand moyen de répandre l'instruction dans les classes peu aisées de la société. Je recommanderai aussi d'augmenter tant qu'on pourra la distribution des livres élémentaires.'

"*Et le roi qui, dans son exil*, on le sait, *s'est livré lui-même à l'enseignement*, n'a pas seulement par des paroles témoigné la préférence qu'il a toujours accordée à la méthode *mutuelle*, mais il l'a surtout prouvée par des faits. C'est ainsi qu'avant son avénement au trône, et lorsque l'enseignement mutuel était proscrit, il créait des écoles dirigées d'appres cette méthode, dans les communes de ses domaines; c'est ainsi que depuis cet avénement il a continué d'en fonder, et qu'il l'a fait tout récemment encore dans les communes avoisinant la forêt de Breteuil." * *

"Le journal officiel de l'instruction publique, fondé en Octobre, 1832, sur un rapport du ministre au roi, dont le rédacteur en chef, nommé par le ministre, rétribué par l'Etat, est placé sous la surveillance du Conseil royal, et qui enfin est subventionné de 697 abonnémens payés sur les fonds du ministère, le journal officiel, disons-nous, dans les premiers mois de son existence, se montra partisan prononcé de la méthode *mutuelle*. Elle avait, disait-il, sur les autres, une *incontestable supériorité*. Et non content d'affirmer cette supériorité, il prenait soin de la prouver, et démontrait, par d'excellentes raisons, que dans les écoles *mutuelles* on travaillait six fois plus que dans les écoles de Frères. Puis tout-à-coup à ces éloges succédèrent, d'abord un silence affecté sur cette même méthode, puis bientôt une malveillance mal déguisée contre elle, puis enfin une prédilection marquée pour les écoles de Frères, toutes nuances qui se laissent facilement découvrir à quiconque a l'habitude de lire un journal." * *

"Il nous est donc impossible de ne pas induire de ces deux programmes *pour les brevets de capacité* et des faits qui les accompagnent, qu'ils ont pour but d'arrêter dans son essor l'enseignement *mutuel;* et ce qui vient donner la force de l'evidence à cette induction, c'est un *statut sur les écoles primaires élémentaires communales*, arrêté par le Conseil royal de l'instruction publique, le 25 Avril, 1834, sur le rapport du conseiller chargé de ce qui concerne les ecoles primaires, et approuvé par le ministre.

"Ce statut, qu'il serait trop long d'analyser dans toutes ses impossible for monitors to enter into the rational and intellectual part of education. *All that they can do is to ask, and exact, the questions and answers that are set down for them.* They cannot, like well informed and experienced teachers, vary and adapt their questions to the different capacities of their pupils; nor are they competent to form a proper estimate of the value of the answers, if not given in the expected words. But though monitors are of little use in exercising the understanding, correcting the judgment, and developing the faculties of the children committed to their charge, still they are of the greatest service; for they can teach the technical and elementary parts of education, and hear tasks and repetitions, as well, if not better, than the best-informed teachers. This is indeed all that can be expected from the generality of monitors, *but it is a great deal;* for as elementary instruction, tasks, and repetitions, constitute the principal portion of the business of the school, the master, by being relieved from this drudgery, is

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parties, ne renferme presque pas une disposition qui soit conforme à la méthode mutuelle, ou qui n'y soit bien plutôt essentiellement contraire.

"Nous n'en citerons qu'une seule, celle qui est pour ainsi dire fondamentale :

"'Toute ecole élémentaire sera partagée en trois divisions principales à raison de l'âge des élèves.—Les élèves de l'age de six à huit ans formeront la première division.—Les enfans de huit à dix ans formeront la deuxième division.—Une troisième division se composera des enfans de dix ans et au-dessus jusqu'à leur sortie de l'école.'

"Nous disons que le partage en trois divisions est le renversement de l'enseignement *mutuel,* et bien plus que ce partage *à raison de l'âge des élèves* est le renversement de tout enseignement quelconque.

"Du reste, ce statut, dans son ensemble, est un système d'organisation d'enseignement simultané, système, qui plus est, copié dans ses points principaux sur celui des Frères.

"Il n'est personne, pour peu qu'il ait quelque notion de l'enseignement mutuel, qui, s'il jette les yeux sur cet acte, ne soit aussitôt convaincu que *son exécution entraînerait la destruction de toutes les écoles mutuelles d'un bout de la France à l'autre,* destruction telle que la Restauration elle-même n'aurait pas osé la prescrire."

enabled to devote his time and energies to the intellectual education of the more advanced scholars.

Monitors may, it is true, be made competent to give intellectual instruction also. Père Girard, Professor Pillans, and others, have recommended masters to prepare the monitors for their office by extra and adequate instruction; but in this case they are no longer *monitors*—that is, children taken from the classes to instruct their school-fellows—but regularly prepared teachers; nor can the master, notwithstanding the extra labour which their preparation has cost him, count upon their services for any length of time without remuneration. Such a class of monitors we have at present in our Model School, and certainly admirably well qualified they are for their office; but, as they either receive or expect some remuneration for their services, they are to be considered rather as assistant teachers than monitors. It is to be wished that there were a few such monitors in each of our large schools: but I fear that the difficulty of raising local funds to remunerate them renders this wish ineffectual. The only thing we can do is, to endeavour to convince the parents of the pupils of the advantages and *necessity* of the monitorial system, particularly *in large schools,* for which it is peculiarly adapted. The principal advantages I have already pointed out, and I need not recapitulate them further than to observe, that the economy not only of money, but of time also, produced by it, is the best argument we can use with the people. If we can once convince them that, while they pay less, their children learn, or should learn more—for, instead of waiting more than half the day for perhaps less than half an hour's instruction from the master, they are kept constantly learning under competent and pains-taking monitors; or that their children, if employed to teach others, are at the same time teaching themselves, (for the best way to learn is to teach,) and that, even if this were not the case, the *extra instruction* which their assistance entitles them to receive from the master will amply repay them for their loss of time;—in short, if we can convince them that the system is less expensive and more efficient than the old way, as they call it, their prejudices against it will disappear, and they will no longer regard it as invented merely for the ease of the teacher—in fact, as a kind of teaching for charity, which they think no person except paupers should submit to.

We subjoin the opinions of several eminent educationists regarding the Monitorial System.

Mr. Wyse, in his valuable Work on Education, observes :—

"Few methods have been more overrated and underrated, both in their principles and applications, than this same method of mutual instruction. On its first introduction it had all the fashionable celebrity of a new discovery. It was described as the philosopher's stone in education; the single process by which every thing was possible, and every result a benefit. We are, at present, somewhat more sober—many of those early glories have been eclipsed. The German educationists, especially, have pronounced themselves very strongly against its pretensions. It adds nothing to the moral influence of the teacher—nothing to the development of feeling or character in the pupil. The most insignificant country schoolmaster in Germany does as much for true education as the entire systems of Bell and Lancaster. These judgments, harsh, as undoubtedly they are, have been, in many instances, but too much justified by facts. Many of the mutual instruction schools, both in France and England, deservedly come under this censure. At the same time, it is going too far to attach those demerits to the system itself.

"The system of mutual instruction possesses very numerous advantages in large public schools, over all others. Pupils, monitors, master, all benefit, and not merely intellectually, but morally. The pupils and the monitors both learn, and both in the most effective and agreeable manner, and both learn constantly and methodically. The pupils are taught by persons of their own age, and, as nearly as possible, of their own degree of proficiency; an immense advantage when competent, from the facilities it affords the pupil in proposing his difficulties, and the assurance it gives that he will not be distanced altogether by his teacher. The monitor derives scarcely less profit from his tuition. It is in communicating knowledge we best ascertain how much we really possess. Each pupil is thus a teacher to the monitor, not less than the monitor to him. Nor is the master without his share in the general profit. He is spared the tedium of technicalism—he has no dreary task-work to toil through—he is permitted to use his own powers and acquirements, in a manner the most consonant to his own feelings, and the most advantageous to the improvement of his pupils. It is quite a different thing hearing the same eternal verb mangled by sixty listless children in succession, and passing from circle to circle, witnessing in each the most active exhibition of their several faculties, and receiving frequently, from these uncontrolled displays, light for the management of the characters and understandings of his pupils, quite impossible (if ever they were sought for) under the old system."

Mr. HORNER, in the Preface to his excellent Translation of Cousin's Education in Holland, observes:—

"The plan of mutual instruction, or the teaching in large numbers by means of monitors, as practised in the Bell and Lancaster schools, is a system radically defective, and wholly inadequate either to the individual, moral, or religious training of a child, in the opinion of many who have narrowly watched and closely investigated the results of that system. It has been tried and rejected throughout Germany and Holland, the two countries of Europe where the education of children has been most successfully carried into effect; it is rejected by M. Cousin, a profound, cautious, and impartial inquirer, as will be seen in his most recent work on education—that which I now lay before the public. Dr. Diesterweg, of Berlin, an experienced schoolmaster, went last year into Denmark, for the special purpose of examining certain schools in that country where that system is followed and much extolled; he has published an account of his journey; and although he went with a strong predilection in favour of the plan of mutual instruction, he entirely renounces his former opinion, declaring that, after having thoroughly examined these schools in Denmark, he utterly condemns the system, as reducing the education of the people to mere mechanical repetitions, without any culture either of the heart or of the understanding. Many careful observers have, long since, come to the same conclusion from the experience of the schools conducted on those methods in this country. It is impossible, on visiting a well-conducted school, either on the plan of those usually called National Schools, or that of the British and Foreign Society, without being struck and gratified by the acquirements and dexterity of many of the pupils, and it is difficult to resist being carried away by the *spectacle;* but, as a means of a general, moral, and intellectual training of the whole school, the plan of instruction will not bear examination. Without direct communication between the master and the pupil, there can be no efficient education."

Opinion of Mr. VAN DEN ENDE, Inspector-General of Primary Instruction.—Mr. Van den Ende is considered one of the fathers of popular education in Holland.

"Some well-meaning persons, but men who did not look below the surface of things, and were utter strangers to the subject of public instruction, having, by chance, visited some of those semi-barbarous manufacturing towns of England, where, for want of any thing better, they are too happy to have Lancasterian schools; mistook for a masterpiece of perfection, that which is only the infancy of the art of teaching; and were dazzled with the exhibition of vast numbers of children taught by one master, assisted only by little monitors, chosen from among the pupils themselves.

"Other persons were pleased with the system on account of its cheapness, and then the eye was caught by the mechanical order and precision in the school exercises; the children went through their evolutions, according to a signal given by a child, as the different parts of the machinery in a factory are set in motion by a crank. I added, that I had not met with a single schoolmaster in Germany, who was favourable to the plan of mutual instruction; and that I had not seen one school so conducted either at the Hague or at Leyden. 'Nor will you,' replied Mr. Van den Ende, 'in any other part of Holland. And this by no means arose,' he continued, 'from our not being sufficiently acquainted with that system; we have studied it well, and it is because we have studied it, that we have laid it aside.'"

Opinion of the Rev. M. L'Ange, Inspector of the Amsterdam schools:—

"I was surprised to see a boy of twelve years old in one of the passages, teaching the first elements of reading to some very young children. 'Is that little fellow an assistant?' I asked. 'No; he is one of the pupils in the school, belonging to the most advanced class.'—'He is then a monitor,' I replied, 'and you adopt the plan of mutual instruction.' 'God forbid,' said Mr. L'Ange, with a smile,—'but we are *eclectic* here; we do not proscribe any useful practice to whatever general system it may belong. Thus when a child is found to possess the talent of teaching, and intends to become an assistant, and ultimately a teacher in a primary school, we see no objection to entrusting a pupil of this description, *not to teach*, but to *hear* the lessons, in the more easy parts, *repeated*. In a case of exigency, children may be safely employed for the repetition of certain things; but the initiatory steps of all teaching require a master. Even our assistants, who are in fact masters, are not entrusted with any thing beyond simple repetitions. It is not a system which is calculated for moral and intelligent beings; and we do not admit the justice of applying it in a school for the poor, more than in any other school. For the poor have especial need of *education*, and you cannot *educate* by a plan of mutual instruction; you can *instruct* only by it, and that in so superficial, and, in some respects, mechanical a way, that it is no cultivation of the mind."—*Horner's Translation of M. Cousin's State of Education in Holland.*

SIMULTANEOUS INSTRUCTION.

LETTER TO THE MASTER OF A MODEL SCHOOL.

THE SIMULTANEOUS method of instruction is now generally preferred to the monitorial or mutual instruction system. In the *Programme* for a National Normal School lately published by the Education Committee of the Privy Council, the simultaneous method is distinctly recommended.* For instance, the future rector is instructed—

> "To arrange the classes in separate rooms or sections of the same apartment, divided by partitions, so as to enable the *simultaneous* method to be applied to forty or fifty children of similar proficiency.
>
> "To adopt means to assemble a greater number of children for *simultaneous* instruction on subjects not so technical as to require a division into classes of fifty."

Our Model School is unfortunately not so constructed; nor would it be practicable, without spoiling the appearance of it, "to divide it by partitions into sections or separate apartments." So fine, and in fact so noble a room, it would be a great pity to cut up into sections; and it would be a still greater pity to deprive us of the opportunity of exhibiting to our visitors the gratifying spectacle of five hundred children receiving instruction on the same floor.

I would not, therefore, recommend any change to be made in the upper or principal school-room. Let it remain as a model of a monitorial school on a large scale, such as are applicable to large towns and manufacturing districts. But let us persevere in our efforts to make it a *model in reality*, as it is in name. Let us introduce into it all the improvements that have been made of late years in the monitorial system; and let us not hesitate to make experiments, and attempt improvements ourselves. My views of the monitorial system, and the modifications it requires, are contained in a lecture which I delivered to the Superintendents before they set out to their respective districts.* This lecture I now send for your perusal, though there is perhaps little in it with which you are not practically acquainted. I shall say nothing more in this letter about the monitorial system; nor about the arrangements in the upper or principal school-room. Few persons are better acquainted with that system than you are, both in theory and practice; and no school, similarly circumstanced, could be better or more efficiently conducted. LESS NOISE, AND AN INCREASED ATTENTION TO CLEANLINESS, are the only suggestions which I consider necessary to urge. The great majority of your visitors, like the world in general, judge from *appearances*. It seldom strikes them that the noise which they complain of is the noise of business, and not of disorder. You should take frequent opportunities, therefore, of convincing them of this, by producing, when they least expect it, general and *instantaneous* silence throughout the school. This I know you can do, by one stroke on the small bell, or by holding up a finger. You should also remind them that it is quite impossible, without considerable noise, and even some appearance of confusion, to make four or five hundred children go through their lessons on the same floor, at the same time. This will lead them to form a proper estimate of what they see, and to give you the credit which your efficiency and zeal in the discharge of the more difficult duties of your office really entitle you to. If you neglect these precautions, you do an injustice to yourself, as well as to the school. It matters little, as far as the majority of your visitors are concerned, that the arrangements of your school and the general proficiency of your pupils are in the highest degree creditable to you and your assistants. Few of them take the trouble of making themselves acquainted with either. *The great majority judge from the* GENERAL APPEARANCE *of the school.* Let us therefore, without forgetting that the moral improvement and literary instruction of the children are our first duties, *pay a little more attention to appearances;* and in order to effect this, let us do every thing in our power to promote *cleanliness,* and to prevent all *disorderly* and *unnecessary noise.* Before concluding this letter, I shall give you my views on the best means of promoting cleanliness, and of preventing noise. Or rather, I shall state here what I have to say on the subject of *noise,* as I am anxious to bring to a close my observations on the monitorial system of teaching, with which noise seems inseparably connected.

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* The proposed Normal School has not yet been established. The simultaneous method of instruction has, however, been introduced into England with great success, under the directions of Dr. Kay. See his interesting Reports on Norwood and Battersea Schools.

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* The preceding lecture.

A very easy, and I think effective rule, would be to instruct and *accustom* the monitors to address their classes in a low, but strong and distinct tone of voice. *It is only the children forming their classes that require to hear them.* Let them, therefore, never pitch their voice beyond their own circles, which are seldom more than five or six feet in diameter. When a monitor speaks so as to be heard by the adjoining classes, he is not only noisy himself, but the cause of noise in the others; for he obliges them to raise their voices higher than would otherwise be necessary. In a word, NOISE BEGETS NOISE. If one monitor be permitted to speak loud when addressing his class, all the others must necessarily raise their voices in proportion.

Impress this upon the minds of the monitors, and *accustom* them, for nothing less than *custom* will do, to speak in a low, but strong and distinct tone of voice. *Loudness* of voice, you know, is neither *strength* nor *distinctness.* A stage whisper is distinctly heard in the most distant part of the largest theatre.

I shall now offer you some suggestions on the SIMULTANEOUS method of instruction; and conclude by recommending you to introduce it into the lower schools; leaving, as I said before, the upper or principal room as a model of the largest class of monitorial or mutual instruction schools. Should we succeed in this, we shall be able to exhibit to the public models of schools on both systems, and of different sizes.

The simultaneous method of instruction differs from the monitorial principally in this, that in the former, the pupils are taught *directly* by the master himself, and not by the intervention of monitors. This is considered the great advantage of the simultaneous method. If the school be large, however, or rather if it cannot be divided into a few classes, the master will be obliged to intrust to some of his more advanced pupils the instruction of certain divisions. Or, in other words, he will be under the necessity of applying the monitorial system to a certain extent.

To put into the same class pupils of the same proficiency, and to make the lesson of a few serve for the lesson of many, is the basis of the simultaneous method of instruction.

If all the children attending a school were engaged in learning the same branches, and if they were all equal, or nearly equal in proficiency and abilities, the whole school, according to this system, would form one class, and receive instruction at the same time. But as this is never the case, the schools under this system are usually divided into three great classes or divisions—1st, 2nd, and 3rd. The French Law, in the 3rd regulation on primary schools, expressly enacts that—"Every elementary school shall be divided into three great divisions, according to the proficiency of the children, and the subjects to be taught." In practice, however, it is often found convenient, and sometimes necessary, to separate these classes into sections or divisions, according as the branches to be taught are applicable to the whole class, or only to a portion of it. In some cases, two classes may be instructed *simultaneously*, and not unfrequently the entire school. This is the meaning of the *second instruction* quoted in the beginning of this letter:—

ts not so technical as to require a division of classes into fifty, a greater number of children is to be assembled for simultaneous instruction."

The teacher, therefore, who wishes to introduce the simultaneous method into his school, should, in the first place, divide it into three great classes, according to the proficiency of the pupils and the subjects to be taught; and having assigned to each class its specific duties, he should so arrange that the instruction of each shall follow in regular and systematic order. These classes he will sometimes unite, and sometimes separate, just as the subjects to be taught are applicable to two or three classes, or only to a division or part of a class.

If the school be small, and the classes few, he will be able to instruct the entire school himself. If the school be large, and the classes numerous, he will be obliged to avail himself of the assistance of some of his more advanced pupils. In short, this system combines the advantages of the *individual* and the *monitorial* methods of instruction; for it so arranges, that the children are either under the direct teaching of the master, or preparing lessons for him, superintended and assisted by the more advanced pupils.

I have now before me an excellent little book on this subject, called "A Manual of Simultaneous Instruction." It is published for the use of the *French National Schools*. As it contains *practical* directions for conducting schools on this system, I shall translate a few passages from it, which will guide you in introducing this method into the lower schools.

"Suppose (says this little book) the number of pupils in the school to be 65. Let us separate them into *five* divisions, according to the degree of their proficiency, and the nature of the subjects to be taught. Every pupil, in each of these divisions, will have the same business, the same books, and the same lessons. [Such a classification, I may observe, exactly accords with our series of Lesson-Books, which naturally suggest *five* classes.]

"The master calls before him the first division; all the children have their eyes fixed on their books, and the lesson commences. The lesson should continue for about eighteen minutes, and thus every child in the class will have the benefit of eighteen minutes' instruction from the master.

"If, when a pupil answers badly, or is ill-prepared, it is so arranged that the next in order who answers correctly shall take his place, it is evident that the entire class will follow the lesson with interest, and endeavour to obtain as high a place as possible.

"Each division of writing will have, say for twenty minutes, the advantage of the master's undivided attention. The same desire of obtaining a high place will render the pupils attentive; and as they all write the same copy, it will be easy to ascertain the comparative merits of each.

"A similar process is gone through by the several classes in arithmetic," &c.

CERTAIN OFFICERS NECESSARY IN A LARGE SCHOOL.

Surveillant, or Superintendent.

"In a large school, it would be impossible for the master to teach and superintend at the same time. He must therefore avail himself of the assistance of some of his more advanced pupils. These pupils, to the number of six, should be called *(surveillans)* superintendents; and each in rotation is to give his services for one day. If there be only five school-days in each week, five superintendents will be sufficient.

"The superintendent takes his station on the platform, seated at a small table, or at the corner of the master's table, in order that he may have the whole school under his eye.

"The superintendent gives the pupils permission to go out, which they solicit by holding up their right hands. He superintends the *(premiers de table)* heads of classes, and takes care that they preserve order in their several divisions.

"In the *(momentanée)* casual but always brief absence of the master, the superintendent supplies his place."

Premiers de Table.

"The master will select from each division, or from the division immediately above it, a *(premier de table)* class-leader, who will direct all the exercises. It is desirable that in each division there should be several pupils capable of undertaking this office, in order that they may, as in the case of the superintendents, discharge the duties of it in rotation.

"Each *premier* is charged with the surveillance of his table or class. He takes down the names of the children who talk or behave badly, but he is not to raise his voice himself, which would only occasion more disorder.

"The master appoints the superintendents and premiers in the face of the school, and surrounds their appointment with as much solemnity as he is able. Their names are also written upon a tablet of honour, to which the master directs the attention of the persons who visit the school.

"Should a premier be absent, the master immediately appoints another pupil in his place."

DISTRIBUTION OF TIME AND SCHOOL BUSINESS.

[The pupils enter the school at seven o'clock in the morning during the summer months, and at eight during the winter; and are dismissed for recreation and dinner at eleven. They re-assemble at one, and remain till four.]

FORENOON SCHOOL.

"*From the first of September till the first of March.* The master, accompanied by the superintendent, enters the school at ten minutes to eight o'clock.

"The master makes and mends the pens, and the superintendent places in a groove of the table made for the purpose, a copy-book and pen for each pupil.

"At eight o'clock the master proceeds to the play-ground, or open court, for the INSPECTION IN CLEANLINESS. If there be no play-ground attached, the children enter the school, *salute the master respectfully* as they pass, and form themselves into lines parallel to the walls. The master passes along, accompanied by the superintendent, and satisfies himself by personal inspection, that their hands, faces, and ears are clean, their hair combed, and their clothes brushed and clean; for even the plainest and coarsest clothes may be clean and neat. Should any child continue deficient in cleanliness, a note is addressed to the parent on the subject by the master. Any child having a cutaneous or infectious disease, is immediately sent home, and not re-admitted till his complete cure is certified by a physician. It would be very desirable if a medical man were to be occasionally present during the inspection in cleanliness.

"After the inspection in cleanliness is over, the roll is called, and business commences.

"The *premier* of the fifth division conducts his class-fellows to the master to be examined in grammar lessons. The *premier* recites first, and then follows with attention the recitation of his class-fellows. The master marks and sums up the mistakes of each pupil. When the examination of this class is finished, the premier re-conducts them to their seats, and sets them to their writing lessons. In the mean time the *premier* of the fourth division conducts his class-fellows to the master, to be examined in grammar; and when they have finished, they in like manner return to their benches, and commence writing. The third division now proceeds to the master, conducted by the *premier*, and a similar process is gone through. But as the second and first divisions do not yet learn grammar, they say instead tablet lessons in spelling and reading, under intelligent *premiers*.

"*At nine o'clock* the master descends from the platform and proceeds to examine and correct the writing of the fifth division. As soon as this is done, the pupils of the fifth division commence arithmetical exercises; and the master proceeds to examine and correct the writing of the fourth division. When this is done, the pupils of the fourth division, in like manner, proceed to arithmetical exercises; and the master goes to correct the writing of the third division, and so on.

"*At ten o'clock* the master returns to the platform, and the fifth division is conducted to him by the *premier* to be examined in arithmetic on the black board; and as soon as this is over they return to their seats, and employ themselves in preparing lessons in reading, &c.

"The fourth division now advances to the master, to be examined in arithmetic on the black board, and so on.

"The master will often be unable to hear more than the fifth, fourth, and third divisions. In this case, the second and first classes must be heard by the *premier*. It is essential, however, that the master should frequently examine the two junior divisions also, in order to satisfy himself that the *premiers* have faithfully and efficiently discharged the duties assigned them.

"*At eleven o'clock* the school is dismissed for recreation and dinner. It re-assembles at one, and is finally dismissed at four. DURING THE INTERVAL, THE SCHOOL-ROOM IS VENTILATED, SWEPT, AND DUSTED.

"A similar routine is gone through in the afternoon school. After the roll is called, the pupils of the fifth division are conducted by the *premier* to the master to say their reading lesson. This done, they return to their seats, to prepare some other lesson, such as geography; and the fourth division is conducted to the master, and so on with the third, and when practicable, with the second and first divisions.

"At four o'clock, the master having caused the business to cease for the day, names with a loud voice the pupils against whom there are bad marks, and distributes merit tickets to such of the pupils as have deserved them.

"To maintain order in departing from the school, the pupils are arranged in groups, according to the quarter or districts in which they reside.

"Those who have farthest to go, depart first; and between the departure of each group, there is an interval of at least a minute.

"Each group or division is under the surveillance of certain pupils, called *conductors;* and they are expected to proceed homewards, without noise or disorder of any kind. They are neither to run nor to loiter, but to walk quietly two by two, separating only as they arrive at their different places of abode."

My anxiety to touch on every thing that might be interesting to you, or useful to the schools, has extended this letter far beyond my intention, and, I may add, my expectation. I must, therefore, bring it to a close, and reserve for a second letter the additional passages which I had marked for translation. I cannot conclude, however, without adding another regulation, which is rigidly observed in the French elementary schools.

The children, while in the play-ground, are never left to themselves. They are always under the *surveillance* of the teachers and superintendents, who, without controlling or embarrassing them by their presence, keep a strict watch over their words, actions, and general demeanour.

Of all the regulations, I consider this by far the most important. The play-ground is not intended as a place in which the children may riot uncontrolled. It is the school for *moral* instruction; and inasmuch as moral improvement is of more importance than mere literary information, there is even a greater necessity for the master's presence in the play-ground than in the school-room itself. Of course I do not mean that the master should lecture the children while at play, nor interfere at all, except in cases which require immediate animadversion. On the contrary, he should throw up the reins, and leave them to the full enjoyment of their freedom; taking care to note, for the materials of a moral lesson in the gallery, any excesses or faults they may commit in their uncontrolled moments.

I need not add, that all the educationists of the present day consider the play-ground as essentially necessary for *moral training*. In a word, the play-ground is the best place for discovering the dispositions, developing the characters, and forming the habits of children.

In conclusion, I think it desirable that we should draw up a set of regulations for the use of our school. Some of those I have quoted, and others which I shall notice in my next letter, might be adapted to our use. *The surveillance in the play-ground* might be at once adopted.

In the Minutes published by the Committee of Council on Education, the Simultaneous Method is thus described:—

"The *simultaneous method* is distinguished from the method of mutual instruction by arrangements which enable the children to receive instruction immediately from the master or one of his assistants, instead of from the most advanced of their fellow-pupils, from which practice the method of mutual instruction derives its name. Under the system of mutual instruction a monitor is selected from the more advanced pupils, who instructs a class, varying in size from eight to twelve children in Lancasterian schools, and from twelve to thirty in National schools, in which classes the children are taught individually and in succession. In large schools, the master's time is much occupied with general superintendence, and when he instructs a class he adopts the method of individual and successive instruction. On the other hand, any number of children under forty or fifty may be instructed on the simultaneous method in one class, even in the departments of purely technical instruction. A much larger number of the children may thus be brought under the personal care of the superior master, and may be trained by him intellectually and morally. In such classes the instruction is not individual and successive, but is simultaneous, the mind of each child being at all times under the influence of the master. In Holland such classes frequently consist of from sixty to one hundred children; but forty children compose a class, the technical instruction of which can be conducted with ease by an experienced master on the simultaneous method. Moreover, in instruction of a less technical character, and requiring a less careful division of the school according to the attainments of the children in the technical portions of elementary learning, one hundred or one hundred and twenty children may be taught at once, either in a well-arranged school-room, (where their instruction can be conducted without removal from the places they usually occupy in classes,) or by means of a central school-hall, in which three or four classes can be assembled for such general instruction in a gallery, like that used in infant schools.

"The simultaneous and mixed methods of instruction, which are now adopted in the schools of Switzerland, Prussia, Germany, and Holland, form an essential feature in the internal economy of a school in which it is proposed to teach forty or fifty children in each class. In order to enable the teacher to conduct this instruction successfully, the desks and forms should be arranged as in the Dutch schools, the scholars being all placed with their faces towards the teacher in successive lines of desks half the usual width. The scholars retain their places while the lessons proceed, the chief demonstrations being given on a large black board, suspended on the wall or on an easel opposite to the class. The teacher, during the reading, spelling, and writing lessons, sits on a platform, slightly elevated, opposite the centre of the first bench. The simultaneous method may be varied by interrogating individuals, by questioning the class, and receiving collective or individual answers, and by receiving answers in writing from the class. Each of these methods would deserve particular description, if that were not inconsistent with necessary brevity; and the method of arranging and communicating such lessons, requires illustration with regard to each subject, which can only be properly given in a treatise on method, or in manuals on each department of instruction.

"The synthetical method supposes that the teacher leads the children from the known to the unknown by such gradual steps as to require no effort of analysis on their part, but to render the knowledge of general facts the consequence of an acquaintance with the elements from which they spring. When this method is employed in combination with the simultaneous, the acquisition of knowledge is invested with its natural attractions, and the efforts of the children second those of a teacher of a mild and persuasive character so earnestly, as to remove the necessity for the adoption of the too prevalent practice of coercion. The moral discipline of the school is thus dependent, in a great degree, on the method of instruction. The teaching that loads the memory with what is not understood, is vain; because the teacher, by such a method, strips knowledge of its attractions, and encounters the necessity of enforcing application by the fear of punishment and the hope of reward. Inferior motives being appealed to, the moral discipline of the school is reduced to a lower standard.

"Under this method nothing is learned by rote, and the attention and attainments of the children are tested, not merely by requiring answers from individuals during a simultaneous lesson and at its close, but by occasional interrogative lessons at the desks, in which the children are required to make written replies; and the lessons on objects especially are tested by requiring the children to write on their slates what they remember of the lesson, which, besides affording a proof of their attention and memory, is an excellent exercise in writing, spelling, grammar, and the art of composition. The first and second classes at Norwood, already write out on the slate, with ease and accuracy, the chief elements of the lessons which they have received in the gallery, and other classes are undergoing constant practice in the same art."

PESTALOZZI

AND HIS SYSTEM OF EDUCATION.

In my present LECTURE, I purpose giving you a brief account of the Pestalozzian system of education. The inventor of it was Henry Pestalozzi, a native of Zurich, in Switzerland. But as Pestalozzi himself was so much mixed up with the system which goes by his name—in fact, as it may be said that he constituted the system himself, it will be necessary, before entering upon it, to give an outline of the life and character of the man, and of the circumstances under which he acted.

Henry Pestalozzi was born at Zurich, in the German part of Switzerland, on the 12th of January, 1745. His family, we are informed by his biographer,* belonged to the "*honoratiores*;" that is, to what we would call, in this country, to the gentry. His parents, however, were far from being opulent; and by the premature death of his father, a physician by profession, he was left an orphan at the early age of five years. Such a misfortune was doubly disadvantageous to young Pestalozzi. The premature death of his father left him almost entirely unprovided for, and altogether destitute of a father's assistance in developing his understanding, forming his character, and superintending his education. His remaining parent, however, nobly performed her part—nor were his father's family and friends neglectful of their duty; advice and assistance were cheerfully given, and young Pestalozzi was prepared in due time for entering into a profession suitable to the rank held by his father. From the circumstances in which he was placed, we would naturally expect that he was brought up in retirement and seclusion. His early and constant companions were a fond and devoted mother, and an old, faithful, and attached female domestic called Barbara. To these circumstances he owed, perhaps, much of that gentle, and almost feminine disposition, which distinguished him through life. His secluded education naturally led him into peculiarities of habit and character, which his youthful associates soon discovered, and not unfrequently ridiculed. But while they distinguished and addressed him by the name of *Harry Oddity*, they always found something about him which repressed their ridicule, and awakened in them sentiments of regard and respect.

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* Dr. Biber, to whose interesting publication I am largely indebted for this Lecture.

His feminine turn of mind, and a want of dexterity and physical energy, unfitted him for joining in the active games, the eager pursuits, and the wild and boisterous sports in which schoolboys delight; nor had he any desire even for distinction in such exercises. But though he felt indifferent, and even disinclined to participate in their pursuits, yet he was often known to undertake cheerfully, and perform resolutely, what the boldest of them all would have feared to attempt. One instance of this may suffice. In the great earthquake of 1755, which was so severely felt in Switzerland, the house in which little Pestalozzi and his school-fellows were assembled shook so terribly, that the teachers ran out almost over the heads of their pupils. After their first terror had subsided, they ventured to return for their hats, books, and other articles, which they had abandoned in their flight; but the only one who had the courage to mount the building for the purpose, was our youthful hero—*Harry Oddity.*

It does not appear that Pestalozzi was distinguished in his schoolboy days by any decided mark of intellectual superiority; nor was the dull drudgery of a grammar school calculated to arouse his latent energies. His taste and his talents inclined him to philology, and the acquisition of languages; and these studies, combined with the religious feelings which maternal piety had early and effectually impressed upon his mind, naturally led him to select the church as a profession.

His first attempt at preaching, however, owing to his nervous temperament and natural timidity, was so decided a failure, that he determined at once and for ever to relinquish the idea of entering into holy orders. Having given up the church as a profession, he turned his attention to the law; but instead of close application to legal studies, he allowed his active imagination to wander over the wide field of political disquisitions. Instead of studying the pandects of Justinian, or, as we would say, instead of giving his days and his nights to *Coke upon Littleton*, he embarked in speculations on the social compact, and the foundation and best form of governments. Nor had his researches any practical or utilitarian tendency. His first attempt at authorship was an essay on the constitution of ancient Sparta, which was followed by a spirited translation of some of the orations of Demosthenes. Such publications, I need scarcely observe, though evidence of early ability and classical attainments, interrupted and unfitted him for the severer studies of the legal profession.

Among other speculations, the subject of education did not escape him; and his ingenious and discerning mind soon led him to discover the defects and errors of the prevailing systems. He held, and held truly, that THE END OF ALL EDUCATION IS, TO PREPARE AND ADAPT MANKIND FOR THEIR RESPECTIVE DUTIES AND PECULIAR PURSUITS IN LIFE: and comparing this principle with the facts around him, he could not avoid concluding that the prevailing systems of education, not only of the people, but of their guides and rulers also, were radically erroneous. His views on this subject he published in a pamphlet on the bearing which education ought to have upon our respective callings in life.

About this period some works peculiar to the times fell into his hands, which, by their misanthropic eloquence and subtle reasoning so bewildered his mind and perplexed his judgment, that he gave up his speculations in despair. A severe and dangerous attack of illness confirmed him in his determination to relinquish his speculations, and to devote himself to something practical. With this view he committed to the flames his embryo essays on education, politics, and government, and bound himself as apprentice to an eminent agriculturist called Tschiffeli. While in this employment his health improved; and his peace of mind, which had been disturbed by the unfortunate result of his speculations, became composed and tranquil.

After qualifying himself under the direction of Tschiffeli for conducting an agricultural establishment, he expended the small patrimony which his father had left him in the purchase of a tract of waste land in the neighbourhood of Lenzburg, in the Canton of Berne, on which he erected a dwelling-house with the necessary out-buildings. To this establishment he gave the name of NEWHOF—that is, the *new farm*. With all the vigour and energy of a young man of twenty-two, Pestalozzi applied himself to the cultivation of his estate—which indeed to deserve that name required years of persevering industry and prudent management.

This may be regarded as the happiest period of his life. His agricultural enterprizes succeeded to his entire satisfaction; and his happiness was completed by his marriage with Anne Schulthess, a young lady as distinguished for her beauty as she was for her accomplishments and talents. Anne Schulthess had also, what the world estimates more highly, considerable property; and the wonder was, that she who had suitors in abundance should make choice of Pestalozzi, whose person was far from being attractive, and whose habits, even then, were considered by many ridiculously eccentric.

This marriage put Pestalozzi into possession of a large share of an extensive cotton manufactory, of which the father of his wife had been the principal partner. This branch of business had been but recently introduced into Switzerland, and great advantages to the nation at large were expected from it. Pestalozzi, as might be expected, applied himself with diligence and zeal to the management of a business which was expected to prove a source of national prosperity. This connexion brought him into contact with the *manufacturing classes;* and this led his active and inquiring mind to compare their condition with that of the *agricultural* portion of society with which his previous occupation had made him perfectly acquainted. The errors of the prevailing systems of education he had previously pointed out in the essay which he had given to the public: and now that his means enabled him, he determined to put into practice the reforms he had recommended. With this view he converted his establishment into an asylum for the reception of fifty destitute children; and to enhance the value of the results which he hoped to obtain, he selected them from the very dregs of the people. His object was (by giving those children whom he had rescued from misery and vice the peculiar instruction and habits which their destination in life required) to lay the foundation of a reform in the education, and consequently in the character and condition of the people at large. Such was his benevolent intention; but he unfortunately failed to carry it into execution. His youth and inexperience—the want of proper organization in his establishment—the confusion arising from the mixture of manufacturing industry and agricultural labour, and of domestic economy and commercial operations, led him imperceptibly into pecuniary embarrassments, which had the effect of breaking up the establishment at Newhof before he had sufficient time to work out his interesting experiment. To a person less sanguine than Pestalozzi, this would have been a distressing disappointment—to him it was almost death. His mind was so deeply and permanently affected by it, that he seemed to have lost that serenity of mind and equanimity of temper for which he had hitherto been so distinguished.

Thirty years after, in a letter to his friend Gesner, he refers to this failure with regret and disappointment. His words are—

> "It is now more than thirty years since I first put my hand to this same work, which I am still pursuing. Popular education once lay before me like an immense marsh, in the mire of which I waded about until I had discovered the sources from which its waters spring, as well as the causes by which their free course is obstructed, and made myself acquainted with those points from which a hope of draining its pools might be conceived. I lived for years together in a circle of more than fifty pauper children; in poverty did I share my bread with them, and lived myself like a pauper, to try if I could teach paupers to live as men. The plan which I had formed for their education embraced agriculture, manufacture, and commerce. In no one of the three departments did I possess any practical ability for the management of details; nor was my mind of a cast to keep up persevering attention to little things; and in an insulated position, with limited means, I was unable to procure such assistance as might have made up for my own deficiencies. In a short time I was surrounded with embarrassments, and saw the great object of my wishes defeated. In the struggle, however, in which this attempt involved me, I had learned a vast deal of truth; and I was never more fully convinced of the importance of my views and plans than at the moment when they seemed to be for ever set at rest by a total failure."

He then feelingly dwells upon the contempt and scorn which the failure of his plans exposed him to; but we need not follow him farther. The cause of this failure is evident. No man, and least of all Pestalozzi, who was an enthusiast in the educational part of the enterprise, could at the same time discharge with efficiency the numerous and difficult duties of manager, agriculturist, manufacturer, and merchant.

But even this failure was productive of much good. More than one hundred children were rescued by it from ignorance, degradation, and vice. It also supplied Pestalozzi with a rich store of experience, which was of the greatest service to him in his future plans and operations.

During his residence at Newhof, he published several interesting works on popular education. The first, "*Leonard and Gertrude*," a kind of novel for the people, was written with a view to deposit in it the knowledge he had acquired of the condition of the lower classes, and the experience he had gained in attempting their improvement. As a *novel* this book was very generally read and admired, but the *moral* of it was disregarded. Even those who entered most into the author's meaning, said—"Indeed, if there were many mothers like Gertrude, many schoolmasters like Gluelphi, and many magistrates like Arnheim, the world would be in far better case!"—and there the matter ended.

As this work exemplifies the system of Pestalozzi, which I have undertaken to describe, I have made from it copious and interesting extracts. Gluelphi, a reduced officer, under the patronage of Arnheim, the lord of the manor, undertakes the re-organization of the village school; and having been introduced to the villagers as their new schoolmaster by Arnheim and the pastor on Sunday after sermon, he announced his intention of opening the school on the following morning. He came accordingly, but with an anxious and agitated mind, in consequence of various gossips which had reached his ear, and which evinced no kindly disposition towards him on the part of many of the parents, as well as of their children.

"When he came to the room, he found about a dozen of the brawlers, the most insolent that were in the village, both men and women: they saluted him as a master does a journeyman, when he comes to him into his workshop. They lost no time in telling him, in a tone which implied not the slightest doubt of their right to be there, that they were come to be present at his instruction, and to see upon what system he was going to teach. He replied that he begged their pardon, but that he intended to have their children to himself to-day. At this the gents. and their wives stared very much; for they could not at all understand how a schoolmaster dared, in their own school-room, to tell them that he would not have them in it. At first they affected not to have understood him, and putting their heads together, remained in the room. But Gluelphi gave them another hint, that he intended to have the room cleared, and that he should not begin school till they were gone out. At last, when they saw that they could not enforce their presence, they went away.

"The minister had sent on Sunday evening to all the houses, to say that all the children were to be at the school-room precisely at eight o'clock; yet at half-past nine there were still a great many wanting, from the disorderly families, and from the houses of some of the magistrates. With the exception of those whom their parents accompanied from curiosity, the children of Gertrude, and those of another orderly family who came with her, were the only ones that arrived quite in time. Meanwhile, the whole village was in the greatest suspense, till they should know what new fashions Gluelphi was going to introduce into the school, and for several days past this had been the great topic of their discussions. This was the reason, too, why the brawlers were so unwilling to leave the school-room. There was nothing extraordinary, however, in this general excitement, considering that a lathe, a carpenter's bench, a small forge with an anvil, a great number of work-boxes, and a variety of other articles of the same kind, intended for the school, had been sent from the castle and the parsonage house. Indeed, it had been Gluelphi's plan to connect, at the very outset, all his instruction with different sorts of manual employment; but Gertrude soon convinced him that it was impossible, at first, to take any thing in hand, except what the children had been accustomed to, however little it might be, and however badly learned. The lathe, bench, work-boxes, &c. had accordingly been left, for the present, in the parsonage house, and Gluelphi began his operations by examining the children in what they knew already. In giving him this advice, Gertrude added, that such a proceeding would afford him at the same time the best opportunity of finding out *what* they knew, and *how* they knew it, and thereby of forming an estimate of their capacities, their acquirements, and their dispositions.

"This he found actually to be the case. At the first attempt of making them recite their former lessons, the miserable emptiness of their minds, and their utter ignorance of what they thought they knew, because they were able to recite it, became so evident, that before an hour had elapsed the poor lieutenant's patience was almost exhausted. The very contrast between their *looks* and the *words* which they pronounced, and which were obviously on their lips quite unmeaning, put him out of countenance. The child of Halloric, whose eye was full of envy and malice, stared him in the face with the greatest insolence and scorn while reciting the words—'Thou shalt love the Lord thy God, with all thy heart, and with all thy soul, and with all thy strength, and with all thy mind; and thy neighbour as thyself.' But she knew neither what was meant by 'thyself,' nor that she had a heart or a soul, nor who her 'neighbour' was, except it were '*the people next door*.'

"The child of Scraper, a great miser, repeated the text, 'Sell all that thou hast, and give it to the poor;' and the other, 'Lay not up for yourselves treasures upon earth, where moth and rust do corrupt, and where thieves break through and steal.' But when Gluelphi asked whether he had ever given any thing to[1] a poor child, he answered directly in the negative; and upon the next child whispering to him that he ought to have answered differently, he replied, 'Don't you know 'tis what one eats one's self that does one good.' This boy did not think himself at all bound to give any part of what was his to any one else; and when, after school, some children told him that his answer would gain him no great favour from the schoolmaster, he said, his father and mother must well know what was right, and they had often told him that he must keep to himself whatever they gave him; and that if he carried any of it out and gave it to others, it would be as bad as stealing. When asked what '*treasures*' meant, he knew nothing at all, except that he had heard of conjurers who could force the devil to give up treasures which he had hid under ground. Gluelphi, who was anxious to know more about the children, listened to these and many other things of the same kind very patiently, and made scarcely any remark.

"The insolence of one boy, the son of one Hardpunch, however, threw him off his guard. He wanted not only to repeat his texts, but also to explain them. He observed that there was a great difference between one sort of stealing and another. To rob a rich man was a very different thing from robbing a poor man; that not all that was called stealing was really stealing, and instanced the disciples when they plucked ears on the Sabbath day. Gluelphi, though he did not reprove him, otherwise than by a look of dissatisfaction, was very much vexed with the insolence and hard-heartedness which this boy evinced in this distortion of scriptural truths.

"Another boy, a relation of Hardpunch, and a great blockhead, had got whole chapters of the Bible by heart, and rehearsed as a specimen the 99th Psalm; but he pronounced hardly one word of it correctly, and in the manner he said it, there was not one verse of it that made sense; yet so proud was he of the feat of saying a whole psalm, that it was difficult to say whether impertinence or stupidity was the predominant expression of his face.

"Gluelphi could stand it no longer. He told him to stop, and said—'What you repeat here is not the 99th Psalm; it is stupid stuff, which no rational creature will ever recognise for the 99th Psalm.'

"'To be sure it is the 99th Psalm, master,' replied the boy.

'Yes,' resumed Gluelphi, 'as it is in the book, but not as you now say it. As you say it, it is rank nonsense, and you had done better to learn the Merry Jester by heart in this way, than a psalm.'

"'I know that too, master,' said the boy in an indifferent tone, 'and if you like I'll repeat some of it.'

"Such absence of all feeling among the children was more than Gluelphi could endure; particularly, as he saw that some of them were instigated to behave with insolence. But even from those who were not, it was *impossible to elicit one idea or feeling on the subjects contained in their books.* There was not even the slightest glimmer of *a wish to understand what they repeated,* and the greater and more sacred the import of what ran from their lips, the more unfeeling and stupid were their looks. It was in Gertrude's children only that he discovered a corresponding impression of the mind in the recital of their texts. They were the only children in the school that possessed the power of expressing their thoughts. All these observations together began to ruffle his temper, in spite of all the resolutions he had formed. After the first half-hour of the examination, he stood before the children with a wry face and a cross look, and he began himself to have ill bodings of his success. To say one word in that spirit of maternal solicitude and kindness by which Gertrude encouraged her children, seemed with such a mass almost impossible, and yet he knew that without this he could never produce any effect. He felt not at all at home in the school-room, and began to be fidgety and uneasy; and the more he saw that the children had been set against him, the more unpleasant did his feelings become. Gertrude too felt more uncomfortable that morning than she had ever felt in her own room. She was pained to see Gluelphi so bewildered, but she was herself at a loss what to do; and when the clock struck twelve, they both left the school, evidently vexed at the ill success of their first morning.

"The afternoon was less trying; for Gluelphi had collected himself in the interval, and finding that by giving way to the impressions he had received, he had incapacitated himself for the right performance of his duty in the morning, he made a serious effort to arm himself better against any unpleasant occurrences that might await him. He had some conversation too with Gertrude, the result of which was that she proposed the introduction of another volunteer assistant, whose presence, even for a few days, she thought would be of great service. The greatest difficulty seemed to be, that Gertrude was a stranger to most, and Gluelphi to all of these children, so that the better ones were restrained by timidity, while the unruly ones availed themselves of this opportunity of carrying on their sport with the greater boldness. The person whom Gertrude had in view was the daughter of a master-spinner in Bonnal, who, in distributing the work which her father gave out to the villagers, and receiving the yarn back, had become well acquainted with most of the families, and was personally well known to all the children. There was another reason why the interference of 'Cotton Mary' was highly desirable. It was currently reported from house to house, that the new schoolmaster had declared on the first morning there was more use in learning the Merry Jester than in learning the Bible, and the 'pious folks' left each other to judge what education their children could receive from such a blasphemer. This rumour was taken up by Cotton Mary on her first entrance to the school, and by talking familiarly with the children, she impressed upon their minds the contrast between what Gluelphi *had actually said*, and what he was *reported* to have said, so forcibly, that except with a very few who were determined he should be a blasphemer, the effect of his unguarded speech soon subsided.

"This point being settled, she seated herself behind a desk, and said, 'What should you say, children, if I were to stop a few days, and help the lieutenant to keep school?'

"All the children knowing her, exclaimed—'Oh, that would be very nice indeed!'

"*Mary.*—'But how is it? Will you promise to be obedient?'

"'Oh yes! Oh yes!' exclaimed the children; and some added, 'Oh, we know you, and you need only make us a sign, we shall understand at once what you mean.'

"*Mary.*—'But don't you understand the master as well; if he makes you a sign?'

"The children were silent, but one answered, 'We dare not speak as freely with him as with you.'

"*Mary.*—'But with Gertrude you may, mayn't you?'

"*Children.*—'Not quite.

"*Mary.*—'Well! I'll teach you before the day is over to understand them, and to talk with them as freely as you do with me.'

"And so saying, she turned to the lieutenant, and said, 'Now, sir, if you please, you may ask them one after the other, whatever you like. I shall see whether they cannot answer you as freely and cheerfully as if I were asking them.'

"The lieutenant took the hint, and began to ask now one child, and then another, all manner of questions just as they happened to come into his head; and if any child was backward in answering, Mary went and took him laughing by the hand, or by the hair, or by the ears, and said, 'Come, come, be quick, *say* what you think about it, never mind! Only be free and cheerful!' It lasted not a quarter of an hour, before several of the children felt quite easy, and began to give lively answers; and they thought it very funny that Mary should thus take them by their ears, or by their hair, and oblige them to look up and to speak out. Some of them soon became merry; their answers grew shrewd and witty, to the great delight of Mary and of the lieutenant, who made them repeat some of the quaintest answers aloud, so that all should hear them. This set the whole school laughing; all reluctance soon disappeared; and those who had been most timid were now most ready to answer. Gluelphi was very much struck to see that those who from insolence had been most forward to speak, became more considerate and retired, in proportion as the better children became more free and easy.

" Gluelphi saw that Mary owed much of her influence over the children to the *familiarity and kindness of her manner and address*, and he endeavoured to profit by the example. He succeeded beyond his expectation, and having once established a fellow-feeling between himself and his pupils, he found it much easier to preserve that evenness of temper which he felt to be so essential in his position.

" How much better did his second afternoon succeed than his first! What would have roused his indignation a few hours before, now excited his pity, and compassion took the place of anger. A boy who had mocked him yesterday, and who still looked upon him with an evil eye, he would now take kindly by the hand, and say to him, 'It is a pity you should behave yourself in this way, my boy; it is to your own hurt.' He now began to see the children more and more individually. He looked upon each child separately, and then felt each of them nearer to his heart; nay, he observed something good or lovely even in those whom he had considered the day before as thoroughly perverse. His compassion and his love brought the eminent qualities which he possessed for the office of a schoolmaster into full play, and made him a very different man from what he had been at first. He now saw that it was on these tender feelings that all the influence of Gertrude in her domestic circle rested; and when he represented to his mind the image of maternal kindness and faithfulness which he had from the beginning chosen for his model, he remembered at once the beautiful words of the Psalmist, 'Like as a father pitieth his children, so the Lord pitieth them that fear him.' And he said to himself, as the Lord pitieth them that fear him, so ought I to pity the children of this village, if I truly love them, and mean to be their schoolmaster.

" Gertrude and Gluelphi did from morning to night all in their power to preserve the confidence and affection of the children. They were constantly assisting them with *kindness* and *forbear-*

ance. They knew that confidence can only be obtained by an union of power and love, and by deeds which claim gratitude in every human bosom; and accordingly they endeavoured daily more and more to attach the hearts of the children to them by conferring upon them numberless obligations in a spirit of active charity.

"Gluelphi was deeply impressed with the truth, that education is not imparted by *words* but by *facts.* For kindling the flame of love and devotion in their souls, he trusted not to the hearing and learning by heart of passages setting forth the beauties of love and its blessings, but he endeavoured to manifest to them a spirit of genuine charity, and to encourage them to the practice of it both by example and precept. He led them to live in love. He presented to their minds the distresses and sufferings of others, not of men who had lived thousands of years before them, and at thousands of miles distance, but of those who were near them—whose tears they saw flowing—in whose emaciated countenances they could themselves read the inscription of hunger—whose nakedness and helplessness made an immediate appeal to their senses. By the sight of misery he endeavoured to excite commiseration in the hearts of the children, and to lead them to reflect on the causes of distress and suffering, and on the means of alleviating them. He rendered them attentive to the afflictions of their fellow-creatures. If there were any one ill in the house of any of the children, were it father or mother, or brother or sister, or even the meanest servant, he never failed to ask the child the moment he entered the school-room, how the invalid did, and the child had to give a detailed and accurate account. Gluelphi did not take half answers on these occasions, but was so particular in his inquiries, that if the child had not asked the sick person at home, he would at once betray his ignorance, and be overwhelmed with such confusion, that he would certainly never leave home again without having informed himself on the subject. The children were asked likewise, whether they had spoken themselves to the invalid, and whether they had contributed to alleviate his sufferings, if it were only by avoiding every noise and bustle in the house. Nor did he ever omit the question—Are you praying every morning and every evening for your invalid that God may restore him to health?"

I have gone much farther into this publication than I had at first anticipated; but besides the graphic and interesting description given in these extracts of the organization of a village school, they present a true picture of the Pestalozzian plan of instruction, drawn by the author himself. Nor does this picture contain either embellishment or high colouring. *All that Gluelphi* is *represented* to have done, PESTALOZZI *himself performed*, and, as we shall presently see, under circumstances still more discouraging.

This publication, as I before observed, failed to produce the effect for which it was intended and admirably calculated. The general education and social advancement of the people, at no time favourite speculations with the higher classes, were at that particular period most distasteful and offensive. The leaven of the French revolution was working among the masses, and the minds of the aristocracy were naturally filled with suspicion and alarm. *Pestalozzi's publication, therefore,* which countenanced and encouraged the march of democracy, found no favour in the eyes of the aristocracy of his native land. "*Christopher and Eliza,*" too, which succeeded "Leonard and Gertrude," and which was written for the purpose of directing public attention to his previous publications, was treated with neglect; and his next work, which he entitled, "*Figures to my Spelling-book,*" from its scarce disguised advocacy of democratic principles, increased the number and hostility of his enemies.

Hitherto Pestalozzi had gone with the stream of popular feeling; but the horrors of the French revolution, and the calamities which it brought upon his native land, weaned him of his democratic predilections, and convinced him that the degradation and miseries of mankind do not arise from subordination and subjection to authority, but from a deficiency in mental, moral, and religious training.

But we must pass on to his next and great experiment in education.

Stantz, the capital of Underwald, was in the month of September, '98, laid in ashes, because the patriotic inhabitants of the land of Tell had refused to bow before the fierce democracy of France. They had refused to incorporate their canton with the Helvetic republic established by the armies of France, and the consequence was, that their towns were laid in ashes, and their valleys left desolate. But high as the heat of party and religious rage was enkindled, the Helvetic republic deeply deplored the calamities which their Gaulic allies had inflicted upon one of the states of the ancient Swiss Confederation. They did more. They took immediate and effectual measures to mitigate their suffering, and to relieve their distresses. Provisions were supplied; their houses were rebuilt; and the remains of the scattered population were invited to return to their homes, under the most solemn assurances of protection. It was under these circumstances that Pestalozzi was sent by the government, on the recommendation of his friend Legrand, one of the directors, to open an asylum for the reception and education of orphan and other destitute children; and the new convent of the Ursulines, which was in progress of building, was with adequate funds assigned to him for the purpose.

Leaving his family behind, he proceeded to the scene of his labours. Almost immediately after Pestalozzi's arrival, and before any accommodation could be provided, numbers of children presented themselves; and, as most of them were utterly destitute, it was impossible to refuse them shelter and protection.

The only habitable apartment in the building was made to pay a double, or rather a treble debt. By day it was the school-room and dining-room, and by night it was provided with some scanty articles of bedding, and converted into a sleeping-room for Pestalozzi and as many of his pupils as could be crowded into it. The rest were lodged for the night in some of the neighbouring houses, and returned to the asylum in the morning. Under these circumstances, it was impossible for him to introduce any thing like order or regularity, or even to maintain personal cleanliness; and disorder, discontentment, and disease, were the natural consequences. The following is his own account of the opening of the asylum at Stantz, as given in a letter to his friend Gesner:—

"Through Legrand I had made some interest with the first *Directoire* for the promotion of popular education; and I was preparing to open an extensive establishment for that purpose in

Argovie, when Stantz was burned down; and Legrand requested me to make the scene of misery the first scene of my operations. I went: I would have gone into the remotest cleft of the mountains to come nearer to my aim, and now I really did come nearer. But imagine my position. Alone, destitute of all means of instruction, and of all other assistance, I united in my person the offices of superintendent, paymaster, steward, and sometimes chambermaid, in a half-ruined house. I was surrounded with ignorance, disease, and with every kind of novelty. The number of children rose by degrees; all of different ages; some full of pretensions; others trained to open beggary; and all, with a few solitary exceptions, entirely ignorant. What a task! to educate, to develop these children—what a task!

"I ventured upon it. I stood in the midst of these children, pronouncing various sounds, and asking them to imitate them: whosoever saw it, was struck with the effect. It was true it was a meteor which vanishes in the air as soon as it appears. No one understood its nature: I did not understand it myself. It was the result of a simple idea, or rather of a fact of human nature which was revealed to my feelings, but of which I was far from having a clear consciousness."

The description given here of the difficulties, by Pestalozzi himself, is far from being overcharged. Nothing could be more unfavourable to his experiment than the motley and miserable collection of children committed to his charge. The great majority of them were the offspring of mendicants, vagrants, and outlaws, and *habituated* to falsehood, impudence, and vice, from their earliest years; others, from having been the children of the higher classes, whose lives and property had been sacrificed in the war, were, particularly such of them as had been spoiled by indulgence, discontented and sullen, and disposed to regard with scorn the other pupils, with whom misery had made them associates.

Even the friends and relatives of these unhappy children increased the difficulties of Pestalozzi's position.

"Mothers who supported themselves by begging from door to door, would, upon visiting the establishment, find some excuse for discontent, and take their children away with them, because they would be no worse off at home. Upon Sundays, in particular, their relations of various degrees made their appearance, and taking the children apart, elicited complaints of every kind, and either took them away with them, or left them discontented and peevish. Many were brought to the asylum with no other intention than to have them clothed, which being done, they were removed, often without assigning any reason. Others wanted to be paid for leaving their children, to compensate for the diminished produce of their mendicancy."

But I need not proceed. Enough has been stated to prove that no collection of children could be more unfavourable for an experiment in education.

In consequence of the constant fluctuation of pupils, some months passed away before any settled plan of discipline or instruction could be entered upon. The very difficulty of Pestalozzi's position led to the discovery of his great principle. He tried and found that *love* will triumph over every other feeling and passion in the human breast. His authority was unsupported—his motives distrusted—and his plans ridiculed; and worse than all, his pupils were tutored to regard him with suspicion and hatred. He, therefore, was obliged to rely upon the power of love in the child's heart for the true source of obedience—*and he was not disappointed.*

"While Pestalozzi was thus in matters of discipline reduced to the primary motive of all virtue, he learned in the attempt of instructing the children, the art of returning to the simplest elements of all knowledge. He was entirely unprovided with books, or any other means of instruction; and in the absence of both material and machinery, he could not even have recourse to the pursuits of industry for filling up the time. The whole of his school apparatus consisted of himself and his pupils, and instead of books he directed his whole attention towards the natural elements of instruction, which are deposited in the mind. He taught numbers instead of cyphers, living sounds instead of dead characters, substances instead of shadows, realities instead of signs. He led the intellect of his children to the discovery of truths which in the nature of things they could never forget, instead of burdening their memories with the recollection of words which they could not understand.

"In the midst of his pupils, he forgot that there was any world besides the asylum. And as their circle was a universe to him, so he was to them all in all. From morning to night he was the centre of their existence. To him they owed every comfort and every enjoyment; and whatever hardships they had to endure, he was their fellow-sufferer. He partook of their meals, and slept among them. In the evening he prayed with them, and from his conversation they dropped into the arms of slumber. At the first dawn of day, it was his voice that called them to the light of the rising sun, and to the praise of their Heavenly Father. All day he stood amongst them, teaching the ignorant and assisting the helpless, encouraging the weak and admonishing the transgressor. His hand was daily with them joined in theirs; his eye, beaming with benevolence, rested on them. He wept when they wept, and rejoiced when they rejoiced. HE WAS TO THEM A FATHER, AND THEY WERE TO HIM AS CHILDREN.

"Such love could not fail to win their hearts; the most savage and the most obstinate could not resist its soothing influence. Discontent and peevishness ceased, and from seventy to eighty children, whose dispositions had been far from kind, and whose habits were any thing but domestic, were converted in a short time into a peaceful family circle, in which it was delightful to exist.

"He endeavoured, at first, to let the children feel the advantages of order and obedience; and the playfulness of his nature suggested to him a variety of means by which he could catch and fix their attention, whilst, at the same time, he afforded them real amusement. He was careful never to wear out their patience by too long continued exercises. If he required silence, he would hold up his finger, and ask them to look at it, and keep still till it came down again, and the interval, which they readily granted, he employed in telling them some word or sentence which he asked them to repeat. This being done, he would dissolve the spell, and having allowed them the enjoyment of their freedom for a few minutes, he would, by some other trifle, fasten their eyes and tongues again. The children were thus led on in mere play to a more serious attention, and they soon saw how much more easily and successfully he could teach and they learn, if they consented with one accord to lend themselves to his instruction. The more willingly they submitted to these little self-denials, the more progress did they make in the art of self-command, which it gave them pleasure to practise after they had once reached a certain point.

"He often appealed to their own feelings and good sense, as to the necessity of self-denial and restriction. If some disorder arose from inattention to little things, he would say to them, 'You see now how all this great disorder has come upon us by a trifling neglect. Does not this show that in so large a household every little matter should be carefully attended to?' At other times, if it became necessary to correct a child of some bad habit, he would tell him, 'It is not on your account only that I desire you to leave off this, but on account of the other boys also, who might learn it from you.'

"By these familiar conversations he not only gained his point in almost every case, but produced among his pupils a general feeling in favour of good order, which is far more effectual than the most rigid discipline and severity.

"In order to make them regard each other as brothers, he made them dependent upon each other in a variety of ways. Each child, according to his age and abilities, was in his turn engaged in employments of which the others were to reap the benefit; and as their mutual services were not compulsory but voluntary, they were kindly proffered and thankfully received. In pursuance of this plan, he introduced mutual instruction, which was of great assistance to him in educating so many children, whose ages and capacities differed so widely.

"But the promotion of mutual kindness, rather than the communication of knowledge, was his chief object in introducing mutual instruction into his school. In his school it was not a dead mechanism, devised for the purpose of propelling the children in the course of a certain routine, and kept alive by selfish motives; but it was the spontaneous effect of the common tie of love, by which they were united, inducing them to assist each other in the acquisition of knowledge.

"When he opened his school at Stantz, he had no plan of lessons, no method, no school-book but one, and this he seldom used. Nor did he attempt to form a plan, to sketch out a method, or to compose a book. The only object of his attention was to find out, at each moment, what instruction his children stood peculiarly in need of, and what was the best manner of connecting it with the knowledge they already possessed, or deducing it from the observations which they had an opportunity of making within the sphere of their daily life. But though there was little or no method, there was much life; the children felt excited, attracted, interested, stimulated. They had no tasks to get, but they had always something to investigate or think about.

"Before a twelvemonth had elapsed, this interesting experiment was abruptly terminated, by the entrance into and possession of Stantz by the Austrians. The disappointment at seeing the works of his hands suddenly destroyed, when all but crowned with success, was embittered by the taunts of his enemies, or rather the enemies of popular education.

"'What a pity,' they said, 'that the Austrians should have driven him away; had he been left to himself, he would not have gone on much longer, and then he would have been without excuse.'"

Disappointed and depressed by the failure of his hopes, when he had all but realized them, Pestalozzi withdrew into the solitude of his native Alps. But he did not long indulge in contemplation. His mind was too active for this. He, therefore, again determined to resume his twice-interrupted experiment. In consideration of his former services, and with a view to enable him to prosecute his plans and inquiries, the Helvetic government gave him a pension of £30 per annum, which they afterwards increased to £100.

> "By the advice of his friends, he went in the autumn of 1799 to *Burgdorf*, where the interest taken by some leading men in the improvement of education seemed to open a door for him, and where he actually obtained access to one of the public schools, with liberty to try his experiments. The school itself, however, remained under the management of its former master, who eyed his new colleague with a considerable degree of jealousy, and failed not to exert himself to the utmost of his power for the preservation of 'the old system,' as well as of his office, both of which he judged to be in equal and imminent danger. By intriguing and working upon the prejudices of the parents, he succeeded in ejecting Pestalozzi from his school. He was soon after admitted into an infant school, kept by a good old dame, who left him at liberty to *keep 'crowing the A B C after his own fashion, from morning to night.'*"

Shortly after this he was employed by the Helvetic government, to re-organize the school of Burgdorf, and the castle of that place was assigned to him for a teacher's seminary, by means of which it was proposed to put the public instruction of the whole country upon a uniform plan.

But as nothing important occurred here, I shall just say, that this establishment in a short time after was, on the dissolution of the Helvetic government, left without funds, and consequently broken up. Shortly after this, he joined, by invitation, his school to that of the celebrated EMANUEL DE FELLENBERG;* but as they had different views on education they soon separated.

The next place we find Pestalozzi is in the castle of Yverdon, which is in the Canton de Vaud, on the south side of the lake of Neufchatel. This castle was given him by the government of the Canton de Vaud, under whose patronage he opened his seminary. The plan laid down for his establishment here embraced languages, ancient and modern; geography, natural history, physical science, mathematics, singing, history, and religion. But Pestalozzi was not sufficiently clear in the knowledge of the fact, that there is a *mental* tuition as well as a tuition of the senses; and thus in the avoiding of the one extreme of mere nominal knowledge, conveyed by the usual system, he ran into the opposite one, by keeping the child to the visible representations of number and form in outward objects long beyond that period when they are conceived in the intellect as mental realities or ideas in the true sense of the word, and thus methodically preventing the mind's emancipation from the external world. The merit of having detected and pointed out this mistake, is chiefly due to his disciple Niederer; and the pupils, after they had been allowed sufficient time by the aid of visible representations, to acquire real ideas, were conducted to truly mental operations on the same subjects.

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* A Swiss nobleman, who has devoted the whole of his long life to the education of the peasantry of his native land. He is yet alive. He is the founder of the AGRICULTURAL SCHOOLS.

I find by a Parliamentary Report, that Lord Brougham visited and inspected Pestalozzi's establishment about this time. I shall give you an extract from his evidence before the committee of which he was a member:—

HENRY BROUGHAM, ESQ. (a Member,) Examined:—

"There is another* institution for education at Yverdon, which I also visited in August, 1816. It is under the direction of Mr. Pestalozzi, and consists of above one hundred boys, who are taught every branch of learning by different masters, upon a principle quite new and deserving of notice. Mr. P. observes, that the received methods of instruction are too mechanical; that children are taught by rote, and that their reasoning faculties are not sufficiently called into action. Accordingly, all his pupils are taught in a way that excludes mere mechanical operations, and certainly tends greatly to exercise the mind. No books are allowed; but the master standing before a large board or slate, on which he writes, cyphers, or draws, (as the case may be,) explains or demonstrates to the boys who sit around him, and whose attention is kept awake to every step of the process by constant examination, in which they are obliged to go through the steps themselves *viva voce*. I saw many of them, who had gone a considerable way in the mathematics, without ever having used a book. One had reached the fluxional calculus, of which, from a question I gave him to work, he appeared to have an imperfect notion; although in a far shorter time than he had been learning, the young men in this country acquire great expertness in the highest branches of analytical science. But he and the others whom I examined, had certainly a very accurate knowledge of the *rationale* of all the operations which they had learned, and their minds were much strengthened, I doubt not, by the constant exercise of thought unconnected with notation. I conceive that analytical investigations might be rendered more useful, and might approach more to those of geometry in their beneficial effects upon their reasoning powers, were somewhat of Mr. Pestalozzi's principles adopted. *That he carries it too far, seems equally clear to me;* and I have been informed that his pupils, when they come to mix in the business of life, in counting-houses, &c., are very much thrown out, at least at first, by their having been unaccustomed to the use of books. I should, however, wish to be understood as speaking with diffidence on this subject, from my imperfect examination of it. I understand that a gentleman from Ireland has made it his peculiar study, with the view of introducing it there, and he may, I trust, before long give the public an account of it in detail."

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* The other referred to is De Fellenberg's.

The limits of a lecture do not permit me to follow Pestalozzi much farther, nor is it necessary that I should. It is his system of education that we wish to learn; and to learn it thoroughly, we need not go farther than his experiment at Stantz. The peculiar difficulty of his position obliged him to resort to the gentlest, and at the same time the strongest passion in the human breast. BY ACTING AS A PARENT TO HIS PUPILS, HE ACQUIRED A PARENT'S INFLUENCE OVER THEM. This is the secret of his success. This is properly the Pestalozzian plan. LOVE effected for him—and it will do the same for every person who works for it—what neither promises, nor threats, nor punishments can effect. Need I remind you of the effects produced by it on the children congregated at Stantz? And when children such as they were reclaimed by the force—or rather gentleness of love, can we despair of producing similar effects on the children committed to our charge? Let us act as Pestalozzi did, or as Gluelphi and Cotton Mary are represented to have done, and our success will be similar. In fact, this is the great principle of the Pestalozzian system; it is the pearl of great price, and the teacher who is not possessed of it should gladly part with all that he hath to obtain it.

Love, then, PARENTAL LOVE, is the foundation of the Pestalozzian system of education; and to this he owed almost all his success.

We have seen that the production of simultaneous sounds was the first attempt made by Pestalozzi to harmonize the discordant elements around him, and the experiment succeeded even beyond his expectation. The first and most natural feeling awakened by a simultaneous act of any kind is that of unity; and unity, whether produced by simultaneous sounds or simultaneous movements, is always pleasing to the human mind. Hence the pleasure produced in infant schools by a general clapping of hands, or simultaneous stamping of feet in marching round the room. Hence, also, the pleasing effect produced by the regularity of military movements. To see a thousand men moving as if they formed one great body, and were animated by one mind, is not only a pleasing, but a sublime spectacle. But nothing has a more pleasing or more animating effect than simultaneous sounds produced by human voices. Even the uniform repetition of simple and unmeaning sounds pleases and excites, as the chorus of sailors when weighing or hauling up the anchor. Nothing could be happier, therefore, than the first attempt made by Pestalozzi to soothe and harmonize the minds of his ill-sorted pupils. The success of his experiment led both him and others to carry it too far, as we have frequent occasion to remark in infant and other schools.

As you must prefer hearing Pestalozzi's own account of the plans he resorted to, I shall quote you another passage from his letters to his friend Gesner:—

"Being obliged to instruct the children by myself, without any assistance, I learned *the art of teaching a great number together*—

and as I had no other means of bringing the instruction before them than that of pronouncing every thing to them loudly and distinctly, I was naturally led to the idea of making them draw, write, or work *simultaneously*. The confusion of so many voices repeating my words suggested the necessity of keeping time in our exercises, and I soon found that this contributed materially to make their impressions stronger and more distinct. By doing this in a stated measure, a large class is carried on with the same ease as a single pupil, and the effect produced upon the senses of the children is far more powerful. *Their total ignorance forced me to dwell a long time on the simplest elements*—and I was led to perceive how much higher a degree of internal power is obtained by a persevering attention to the elementary parts until they be perfectly familiar to the mind; and what confidence and interest the child is inspired with by the consciousness of complete and perfect attainments, even on the lowest stages of instruction. Never before had I so deeply felt the important bearing which the first elements of every branch of knowledge have upon its complete outline, and what immense deficiencies in the final result of education must arise from the confusion and imperfection of the simplest beginnings. To bring these to perfection and maturity in the child's mind, now became a main object of my attention and the success far surpassed my expectations.

"The consciousness of energies hitherto unknown to themselves was rapidly developed in the children, and a general sense of order and harmony began to prevail among them. They felt their own powers; and the tediousness of the common school-tone vanished like a spectre from our room. Their mood was not that of laborious learning—it was the joy of unknown powers aroused from sleep.

"Children became teachers of children. They endeavoured to carry into effect what I had proposed, and in doing so they themselves frequently traced the means of execution. Their spontaneous activity was called out in every direction, as far as the elements of knowledge go, and I was brought to the firm conviction that all instruction, to have a truly enlightening and cultivating influence, must be *drawn out of the children, and, as it were, begotten in their minds*. To this, also, I was brought, chiefly by necessity. Seeing that I had no assistant teachers, I placed a child of superior capacities between two of inferior powers. He threw his arms round their necks; he taught them what he knew, and they learned from him what they knew not.

"In explaining to the children the nature of different objects, I confined myself to such as were within *reach of their own senses;* and this led me to pursue the various branches of tuition to their very first elements. I endeavoured to investigate the exact time of life when instruction begins, and I soon arrived at the conviction that the first hour of instruction was the hour of birth; the first tutor is nature; and her tuition begins from the moment when the child's senses are opened to the impressions of the surrounding world. I saw clearly that the child may be brought to a high degree of knowledge, both of things and language, before it would be rational to teach him reading, or even spelling; and seeing this, I felt the necessity of leading children from their earliest infancy to a rational view of all things, by presenting them in a manner calculated to draw forth the action of the different faculties upon every subject. But I saw, likewise, how difficult it is to find men who, without the help of art, are capable of leading children in this manner; and I was deeply impressed with the *want of intuitive elementary books*, by the aid of which, long before the spelling-book comes on, children might be made acquainted with those objects of which they are to learn the names, either by their being exhibited to them in reality, or represented to them in good models and drawings. Experience entirely confirmed this notion. A mother full of interest intrusted me with the instruction of her little boy, then three years of age. I saw him for some time an hour every day; and with him, too, I was merely feeling the pulse of the method. I tried to convert letters, figures, and whatever else was at hand, into means of instruction; that is to say, *I led him to form, concerning every object, distinct notions, and to express these notions clearly in language*. I made him state positively *what he knew of every object*—its colour, its parts, its position, its shape, its number. Very soon I was obliged to lay aside the alphabet, that first torment of youth: he felt no interest in those dead signs: he would have nothing but things or pictures of things; and in a short time he was enabled to express himself distinctly respecting any objects within the sphere of his knowledge. He gathered general information from the street, from the garden, and from the house; and UPON THE BASIS OF CLEAR AND SELF-ACQUIRED NOTIONS, he soon learned to pronounce correctly even the most difficult names of plants and animals. Nay, by *comparing objects entirely unknown to him with such as he was acquainted with, he was able to form of them a definite idea.*

"By degrees, certain fundamental points established themselves in my mind, and guided me in the further pursuit of my object. I became every day more convinced that reasoning with children at an early age does no good whatever; but that the only way to a real development of their mental faculties is—

"1. To enlarge gradually the sphere of their intuition; *i. e.*, to increase the number of objects falling under their own immediate perception.

"2. To impress upon them those perceptions of which they have become conscious, with certainty, clearness, and precision.

"3. To impart to them a comprehensive knowledge of language, for the expression of whatever has become, or is becoming, an object of their consciousness, in consequence either of the spontaneous impulse of their own nature, or of the assistance of tuition. As these three leading points were fixing themselves in my mind, I began to understand more clearly, likewise, the means to accomplish my task, and I found—

"1. That intuitive books for elementary instruction are an indispensable requisite.

"2. That the method of elucidation traced out in these books must be distinguished by clearness and precision.

"3. That upon the ground of the knowledge of things gained in the order and manner prescribed by these books, the children must be led to a knowledge of names or words, and exercised in the use of them, so that they may acquire ease and propriety of expression, even before the period when they are taught spelling."

The term "*intuitive* books," seems strange and unintelligible. Intuitive knowledge is easily understood; but when applied to books or methods, the term requires explanation. Pestalozzi's *leading idea was, that the child should be taught as much as possible by his own examination of things*—his knowledge was not to be founded on hearsay evidence, but on his *own ocular inspection*. This he called, very appropriately, intuitive knowledge; the method by which the teacher leads his pupil to acquire such knowledge, the intuitive method; and the manuals by which the teacher was to be guided in the course of his instructions, he termed *intuitive books*.

We shall conclude this lecture by adding a few detached passages, illustrative of the principles of the Pestalozzian system:—

"When I had begun to teach READING, I found out after a while that my pupils wanted first to be taught *speaking;* and when I set about trying how I could accomplish this, I came at last to the principle of following the progress of nature in the composition of single sounds into words, and words into speech.

"Again, in endeavouring to teach WRITING, I found that I must begin by teaching the children *drawing;* and when I took this in hand, I saw that without the art of *measuring*, there is no drawing.

"Exercises on lines, angles, curves, &c., are calculated to give children such a distinctness and precision in the perception of objects, as will enable them to form a clear notion of whatever falls within the sphere of their observation.

"The mode of beginning arithmetical instruction by means of real objects, or at least strokes and dots representing the different numbers, gives great precision and certainty in the elements—secures the farther progress of the child against error and confusion, and produces a general clearness in the mind on all subjects. For instance, how many times seven is sixty-three? The child, instead of going through a wearisome process of recollection, has 9 times 7 objects before him, which he has learned to count as 9 sevens; the answer with him, therefore, is not a matter of *memory* but of INTUITION.

"Every thing depends on reducing the different branches of knowledge to their simplest elements, and proceeding gradually.

"He began at the easiest task, and exercised it to a point of practical perfection, before proceeding farther.

"From describing the acts of walking, standing, lying, sitting, and things *familiar* to them, a general clearness is produced in the mind, and they acquire the power of describing whatever falls within reach of their observation.

"I did with children as nature does with savages, first bringing an image before their eyes, and then seeking a word to express the perception to which it gives rise."

To analyze objects of intuition:—

1. How many objects, and of how many sorts before you?
2. Their appearance, shape, or outline?
3. Their names and qualities?

Beginning from sounds, as the first means of elementary instruction, he derived:—

1. Instruction in SOUNDS, by which the several organs are to be cultivated.
2. Instruction in WORDS, with which a knowledge of single objects is to be connected.
3. Instruction in LANGUAGE, which is to lead the child to express himself appropriately concerning the objects that have come to his knowledge, and all that he is able to know about them.

Pestalozzi's opinion of what a schoolmaster should be:—

"The schoolmaster should at least be an open-hearted, cheerful, affectionate, and kind man, who would be as a father to the children; *a man made on purpose to open children's hearts and their mouths, and to draw forth their understandings, as it were, from the innermost corner*. In most schools, however, it is just the contrary; the schoolmaster seems as if he were made on purpose to shut up children's mouths and hearts, and to bury their good understandings ever so deep under ground. That is the reason why healthy and cheerful children, whose hearts are full of joy and gladness, hardly ever like school."

LECTURE ON LANGUAGE.

As an introduction to my LECTURES on the origin and structure of the English language, I purpose giving you a brief history of the rise and progress of language in general.

The word LANGUAGE is derived through the French *langage*, from the Latin, *lingua*, the tongue. Language, therefore, originally meant *spoken* words, or SPEECH. It has, however, been naturally extended to all the signs by which man communicates his thoughts and his feelings, his wants and his wishes, particularly to *written* words, which, though not the immediate signs of our ideas, are the signs and representatives of *spoken* words or language. *Language*, therefore, means—1st, *spoken* words; 2nd, *written* words. The term has also been extended to those natural and universal signs by which men in all ages and countries express their inward emotions, as the language of gesture, the language of the eyes, &c. It is also like all other terms, used in a metaphorical or figurative sense, as the language of the stars, the language of flowers, &c.

Inarticulate sounds and expressive gestures, constitute the language of the brute creation; and these signs sufficiently express all their wants and sensations. But the mind of man required a very different interpreter, and therefore the faculty of speech and the elements of language were among the original gifts given to the parents of all mankind by the Great Author of nature. Some writers, it is true, regard language not as an immediate gift from heaven, but as an invention of human ingenuity, and some plausible arguments have been urged in support of this position; but they might as well contend that the organs and faculty of speech were the result of necessity, acting upon human reason. If man had been originally a speechless and savage animal, (*mutum et turpe pecus,*) as some of the heathen poets and even philosophers have supposed, a speechless and savage animal he must have continued to this day; for it is contrary not only to reason, but to all experience, to suppose that savages could, of themselves, emerge from their barbarity, and arrive at civilization. Civilized people may, and have in some instances, become rude and barbarous; but no people have ever from a savage state become civilized, without the intervention and instruction of enlightened colonists or strangers.* This is proved by the history of every people, both in the Old and New World. The Romans, the conquerors and civilizers of Europe, were once themselves a rude and barbarous people, and such they would have continued to this day, had they not been civilized by enlightened strangers. The same may be said of Greece, the cradle of literature, and the nurse of genius—and the same of every nation. Look at America. The inhabitants of that country had not, with the exception of the Mexicans and Peruvians, advanced a single step in civilization when the Spaniards landed on their shores. Nor are the people of Mexico and Peru exceptions; for the progress that they had made in the arts of life was owing, not to their own native efforts and ingenuity, but, as the traditions of both countries testify, to the instruction of strangers. Whence those strangers came, and *how*, it is not our present purpose to inquire. Suffice it to say, that it is probable that they came from the nearest and comparatively civilized coasts of Asia, and perhaps from Norway.

The assumption that men, from being mute and savage animals, could of themselves invent language, and become civilized, has led me into a digression which may seem foreign to our inquiry. I shall therefore return to the question. The Scripture history of the origin of language is not only the most ancient, but the most rational. In the 2d chapter of Genesis, 19th and 20th verses, we are told that God having created the beasts of the field and the fowls of the air, *brought them unto Adam to see what he would call them; and whatsoever Adam called every living creature, that was the name thereof. And Adam gave names to all cattle, and to the fowl of the air, and to every beast of the field.* It is evident from this, that the Creator had from the first conferred upon Adam the faculty of speech, and at least the elements of language, otherwise he would not have been called upon, nor could he have given names to the beasts of the field, and the fowls of the air, and every living creature. It is very probable that Adam's stock of words was very limited; nor was there any necessity that it should have been large. But this does not affect the divine origin of language. It is sufficient for our argument to show that the *foundation* of language was laid by God, and we willingly admit that the immense and amazing superstructure raised upon it is the work of man.

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* On this subject see Archbishop Whately's Political Economy, Lecture V.

The primeval or original language survived the deluge, and continued to be spoken by Noah and his descendants, till the confusion of speech and dispersion of mankind, occasioned by their foolish and impious attempt to build the Tower of Babel. This was in the year of the world 1760; and that the primeval tongue was preserved till this period we are quite certain; for we are told in the 11th chapter of Genesis, that up to this time *the whole earth was of one language and of one speech;* but whether it was totally lost in the confusion, preserved entire in one, or *radically* in all the dialects which sprang up among men after the dispersion, we have no means of judging from Scripture. The Jews have always maintained that the favoured children of Shem continued to speak it, and that it was transmitted to them, perfect and entire, through Abraham and his posterity. As there is no reason for supposing that the primeval language was destroyed, but merely rendered unintelligible, so as to prevent communication, and acting in concert, it is probable that it continued to be spoken by some one of the families or tribes after the dispersion, and perhaps *radically* by all. The Rabbis, or Jewish doctors, assert, on the authority of tradition, that the language of Heber, the great grandson of Shem, and his family, was not confounded, because they refused to join in the mad and impious attempt, and that the primeval tongue was, in consequence, transmitted in all its purity to their favoured nation. They also urge, and this argument is generally admitted, that the Hebrew language has all the marks of originality. It is *simple*, *expressive*, and *energetic*. The radicals or roots of the language are said not to exceed five hundred, and they rarely consist of more than three letters, or two syllables; and from these the entire vocabulary of the language is derived, by a natural and easy etymology. Indeed it is admitted by persons most competent to decide upon the subject, that there is no language so *significant* as the Hebrew; and this is an unquestionable proof of originality, for there is every reason to suppose that language at first must have been entirely *significant*. The names of the persons and things mentioned in the beginning of the Bible, are all significant. For instance, the word ADAM means, in the Hebrew language, red, or *primitive earth;* EVE, *the mother of all living;* and most of the other names are said to be equally expressive of the nature and properties of the things named. And all through the Bible, we find that when a new name is given either to a person or place, the cause of its imposition is added. It is probable, then, that the primeval tongue descended to the Hebrews, but of course greatly modified by time and place, and extended by necessity and invention; for, as I observed before, the original stock of words must have been very limited—in fact, the mere elements of language. It is probable, too, that the radical stems of it remained in all the dialects which sprang up among mankind after the dispersion, and that for a time they had much the same affinity to the primitive tongue as the Italian, French, and other European languages, have to the Latin. The probability of this is increased by the fact, that in almost all ancient languages there are words which indicate a common origin. It is remarkable, too, that the words which are found to be the same, or similar, in all languages, are the names of the things with which mankind would be first and chiefly conversant. For instance, the names of the *elements*, of *kindred* or relationship, and of *number*, are the same or similar in most languages. Thus, in the Hebrew, AUR is *light;* in the Chaldee, UR is *fire;* in the Sanscrit, the learned and most ancient language of India, OUR means *day;* in the Egyptian, OR is the *sun;* in Greek, αυρ is the *air,* and sometimes *light;* and in Latin, AURA is the breath of the *air,* or a gentle breeze, and also *splendour* or *lustre.* The same word, for it is evident that it is the same, is in our own ancient language the Irish, and in most others. Again, the word *father* is in Sanscrit, PITARA; in Persian, PEDER; in Greek, πατηρ; in Latin, the same; in German, VATER and FADER. This word, I need scarcely observe, is the same in meaning, and almost in form, in all these, and in many other languages, including our own; for *father* was formerly written FADER, and is often so pronounced by children and foreigners. But to place the word beyond doubt, I will instance a few others similarly changed. Thus we say, *burden* or *burthen, murder* or *murther, pad* or *path.* In fact, the letters *t* and *d* have nearly the same sound, and are therefore commutable, and frequently interchanged for each other, and *th* is merely *t* aspirated. Again, the word *mother* is in Sanscrit, MATARA; in Persian, MADER; in Greek, Μητηρ, (Doric, Ματηρ); in Latin, MATER; in German, MUTTER; and in old English, MODER. The same analogy holds in the word *brother,* viz.—Sanscrit, BRATARA; Persian, BRADER; Greek, φρατηρ, (one of the same tribe or *fraternity;*) Latin, FRATER; and German, BRUDER. These words, and several others which I might particularize, are sufficient to show that the languages in which they are found, however different and remote, must have derived them either by descent from each other, or from a common source; for it is absurd to consider such words *coincidences.*

This again leads us up to the primeval or original language, the elements at least of which, we conclude, were communicated to the father of mankind by his great and good Creator.

It is quite beyond us to enter into the number and diversity of languages which have sprung up among mankind. Their number and diversity are sufficiently accounted for by the difference of time, place, and other natural causes. Every thing in this world changes, and nothing more than language. Nor is this surprising; for what are words but arbitrary signs and unsubstantial sounds? Things themselves are continually undergoing changes, and can we expect that the unsubstantial signs which represent them can be fixed and permanent? Reason tells us not to look for this; and if we do, the history of every language, and the experience of every day, will convince us of the folly of the expectation. Take up, for instance, an English book, printed four or five centuries ago, and you, though good English scholars, will find considerable difficulty in understanding it, so different is the English as it existed then, from the English of the present day. The same may be said of French—the same of every language which is subject to the wear and tear of popular conversation. In fact, a language never can become fixed and permanent while it continues to be spoken. It is only when it ceases to be a spoken language, or as it is said, becomes *dead*, that it in reality begins to *live*. For instance, the Latin is the same to-day as it was two thousand years ago, and such it will continue to the end of time, because it has ceased to be a spoken language. But before the Latin became a dead language, it was just as subject to change as any other. The most learned Romans of the Augustine age were puzzled by the Latin of their ancestors; and the Italians or Romans of the present day, are as ignorant of the language of Virgil as the inhabitants of this country. To read the pages of their own poets and philosophers, they must learn their language just as we ourselves do. But we need not go so far for proofs of the mutability of language. Our own ears furnish us with the most convincing proofs every day. Here we are, at the same period of time, and in the same island, all speaking the same language, and yet how differently do we speak it! How different the pronunciation of the same words by the Kerry, Connaught, and county Down men! So much so, that I would not be surprised to hear that you sometimes, like the builders of Babel, misunderstand each other, and that when the northern is asked by his southern or western countryman for the loan of a *pen*, he will hand him a *pin*, unless the applicant takes care to say that it is a "*writing pin*" he wants. But the difference of pronunciation is not merely *provincial*. In the same district, an interposing mountain or river frequently causes a difference in the pronunciation and accent of people residing only a few miles asunder. You who are from the county Down, for instance, know how differently the same language is spoken by the inhabitants of the eastern coast, and the people who reside ten or twelve miles farther up in the same county. The people about Bangor and Donaghadee, for instance, differ so much in their pronunciation and accent from the people in the neighbourhood of Belfast and Lisburn, that they seem to speak different dialects. Of course, I am speaking of the common people, who in every age and country have been, and are, the great corrupters of language; for what I have said of our own peasantry may, with still greater justice, be said of the English, and indeed of the uneducated in every nation. In the counties of Down and Antrim, the difference of pronunciation and accent observable among the people inhabiting neighbouring districts, is explained by the fact, that they are the descendants of different people—the native Irish and the Scotch settlers. But no such explanation can be given of the almost different dialects spoken by the English peasantry. If a Yorkshire and Somersetshire peasant, for instance, were brought together, they would have some difficulty in understanding each other. And if a London cockney were sent to act as interpreter, he would, I think, make confusion worse confounded.

When the process of corruption and change of words is going on almost under our own eyes, can we wonder at the number and diversity of languages which have sprung up among men since the world began? If three or four hundred years have made such changes in the English language, which, I may say, has been confined to one country, and in some measure fixed, by being *written* and incorporated with learning and science, can we wonder at the mutations and transformations of language produced by the rude and barbarous nations of the earth since the world began? The number and diversity of languages, therefore, which exist in the world, are no arguments against their derivation from each other, or descent from a common origin.

We have now seen that the account of the origin of language, given in the most ancient and most authentic of all histories, the Bible, is in strict accordance with reason and experience. The faculty of speech, and the elements of language, were conferred upon our first parents at the creation; and this primeval language, of course extended and modified, continued to the year of the world 1760; at which period "*the whole earth was of one language and of one speech;*" but whether it was partly or entirely lost in the confusion of Babel, we have no means of judging from Scripture. It is probable, however, that it was preserved in the ancient Hebrew, and, perhaps, *radically*, in all the dialects which sprang up among men after the dispersion; and it is morally certain that from these original dialects all the languages in the world, notwithstanding their number and diversity, have, at least *radically*, descended. Some of the primitive words, as we have seen, are still found in languages most remote from each other, both with regard to time and place; but it would not overthrow our argument, even if all the marks of a common origin had disappeared.

Much of language, as I observed before, is owing to the ingenuity of man. Having been gifted with the faculty of speech, and supplied with the elements of language, our first parents and their posterity extended and modified their vocabulary as necessity and reason suggested. In the beginning, comparatively few words were required; but as the human race continued to multiply and replenish the earth, the necessity for giving new names to new objects, new relations, and new ideas, obliged them to extend their language, which they easily and naturally effected by forming compounds and derivatives from their primitive or original words. The new names or words which were added to the original stock were, as I before observed, always *significant;* that is, had reference to the nature or some circumstances connected with the thing named. The name of almost every person and place mentioned in the Bible is a proof of this, which you may convince yourselves of by referring, when the reason of the name is not given in the text, to the marginal notes. We do the same when we form new words to express new inventions, new combinations, and new discoveries in geography, &c.; as *Galvanism, Gas, Rail*-roads, *Steam*-coaches; *America,* the *Pacific, Cape of Good Hope, &c.* In fact, all *names,* but particularly PROPER NAMES, were originally *significant,* though many of them have lost not only the meaning, but all resemblance to the words from which they were formed. This leads us to consider many words as *primitive,* which are, in point of fact, *derivative* and *significant.* I shall enter fully into this subject when I take up the etymology of the English language.

As I observed before, it is quite beyond us to enter into the number and diversity of the languages which at present exist in the world. It will be sufficient to state the names of the ancient and primitive dialects, from which all languages, notwithstanding their number and diversity, have descended. First, then, the ancient Hebrew, the Chaldee or Babylonian, the Syriac, the Arabic, the Ethiopic, Phœnician, and Coptic or Egyptian, which the descendants of Shem and Ham spread over the greater part of Asia and the east of Africa; and next, but of equal antiquity, the Celtic and Teutonic, which were carried into Europe by the descendants of Japhet, who migrated, it is generally supposed, from Persia and the Caucasian regions, through Asia Minor. The first migrators, it is also believed, directed their course to the south and west of Europe; and, finally, to the British islands, to which succeeding tides of migrations impelled them. The language of the first, or *Japhetic* migration, (the original inhabitants of Europe,) was *Celtic*, dialects of which exist to this day, namely, the ancient British or Welsh, the Cornish, the Armorican, the Irish, the Gælic or *Erse*, which is but another name for *Irish*, and the Manx. The Teutonic language spread with succeeding migrations over particularly the middle and north of Europe; and from it the Saxon, the English, the German, the Danish, and other northern dialects have been derived. The modern languages of the south and west of Europe, as the Italian, Spanish, Portuguese, and French, are derived chiefly from the Latin, with an intermixture of Celtic and Teutonic words. The Latin is derived principally from the Greek, which is *radically* descended from the *ancient* Celtic, the Teutonic, the Hebrew, and other primitive dialects.

The language of our own country, then, is of the greatest antiquity. In fact, many learned men have contended that *Irish* was the language spoken by Adam and Eve in Paradise. The same honour has been claimed for the Welsh, and other Celtic dialects; and the same for the modern English and other Teutonic tongues.

From what has been advanced, we are prepared to admit, that the Celtic and Teutonic dialects have descended from the languages into which the primeval tongue was divided on the plains of Shinar ; but all beyond this is idle conjecture. As a proof of this, I will quote for you the arguments employed by an old English author, to prove that the English is the primitive tongue. I allude to Verstegan, who published in the year 1673.

> "The English language, undoubtedly, in the ground-work, is that which, at the confusion of Babel, the Teutonic people (those, I mean, that were conducted by Tuisco) did speak. And as the people took their name after their conductor, so the language, consequently, took its name of the people. When it happeneth that any one chanceth to speak confusedly or vainly, without sense, or from the purpose, we say unto him, 'what *Babel* you?' or, by mispronunciation, 'what *babble* you?' which, being by our first

ancestors brought into use upon the said occasion, while it yet remained among them fresh in memory, was as much among them as to say, 'what confuse you?' or, 'what do you do imitating them of such a place, where such confusion was?' He adds that he does not forget that the word babble (*babiller*) occurs in French, but observes that the French is also a Teutonic dialect. He then proceeds to quote other words in support of his view—'to wit, the word ADAM, in Teutonic, means *living breath;* EVE, *like*, or EVEN, the same, whence our *even;* CAIN, in old Teutonic, *Kain* and *Quain*, means wrathful; ABEL, one that is sufficient, a man *enabled* unto the service of God; SETH or SET, so called from being *set* or placed in the room of the slain Abel; GOD means *good;* DEVIL,* *evil*,' *&c.*

Besides compounding and deriving the original words for the purpose of giving names to new objects and new ideas, the ingenuity of man taught him to increase his vocabulary by forming words in *imitation of sounds.* This process is by grammarians called ONOMATOPOEIA, and to it every language, ancient and modern, is indebted for a large number of words. In our language, for instance, wind is said to *whistle*, water to *gush*, and hail to *rattle*—again, a serpent is said to *hiss*, a fly to *buzz*, and a cat to *mew*. All these words, and hundreds of others, such as *cuckoo*, are evidently formed in imitation of the sound emitted by the object or thing to which the name is given. This process, I need scarcely observe, fails in the formation of the names of objects which are incapable of emitting, and have no connexion with sounds; but it is not improbable that many such objects owe their names to a process something similar. In all languages, for instance, there are letters, and combinations of letters, which seem by their sound to denote certain qualities in objects, and to such combinations, it is supposed, language in general owes a great number of names or words;—ST, for instance, seems to denote *stability* and *strength*, as in the Latin *sto*, and in our words *stand*, *stout*, *steady*, *stiff*, *&c.* Again, STR is supposed to denote a greater degree of *strength* or *violence*, as in *strife*, *struggle*, *strike*, *stretch*, *&c.* THR seems to express forcible motion, as in *throw, thrust, throb, threaten, &c.* Wr is thought to denote obliquity or distortion; as in *wry, wreathe, writhe, wring, wrest, wrestle, wrench, &c.* In all these words, and in a great number of others which I need not enumerate, there seems some similarity between the sounds of the letters, and the qualities of the things signified. It is probable, therefore, that language in general owes large classes of words to the supposed resemblance between the nature and quality of objects, and the sounds of certain letters and combinations of letters. It is remarkable, too, that even the names of our *ideas* and *mental operations* are derived from objects of sense to which they are supposed to have some kind of resemblance—of course, figurative. Thus, the mind is said to *imagine, apprehend, conceive, discern, reflect, &c.* We may conclude, from what has been advanced, that the elements of language were communicated to our first parents at the creation of the world; that they and their posterity extended and modified it as occasion required; and that the words which were invented and added to language were originally *significant,* or expressive of the nature or character of the things named. That we are unable to perceive or trace the resemblances, real or supposed, between objects and the words which express them, is no argument against this, for, in most cases, we are ignorant of their history, and it is impossible to ascertain it from the words themselves, since the great majority of them have lost all resemblance both in meaning and in form to the roots from which they were originally derived.

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* From the Greek, *diabolos*, through the Latin and French. The original meaning of the term is a *calumniator* or *liar*.

I shall now make a few observations on the second branch of language, viz. *written* words, or WRITING. *Words* are the immediate signs of ideas, and *written* characters are the representatives of words. Words enabled man to communicate his thoughts and his feelings, his wants and his wishes, to his fellow-creatures around him; but how was he to make himself heard by the absent? How was he to speak to posterity? *Writing,* therefore, was essential to the convenience, comfort, and happiness of man, and as it appears impossible that he could have arrived at the knowledge of it himself, we are justified in concluding that he was instructed in the use of *letters*, as well as of *language*, by his great and good Creator. It is true that *writing* is generally regarded as an invention of man, and there is nothing contained in Scripture directly opposed to this opinion. But when we consider how difficult, I must say again how *impossible* it was for man, in the earliest ages of the world, in the very infancy of his intellect, to invent a set of arbitrary, and in themselves unmeaning signs, by which he could convey to persons not present the thoughts and emotions of his mind, we feel constrained to conclude that the *first* letters were written, as the commandments on Mount Sinai, "by the finger of God." For if the invention of *words*, which nature and necessity in some degree suggested, be considered beyond the reach of human ingenuity, what shall we say of *letters*, which have no connection with nature or instinct? The use of alphabetic or arbitrary signs, for the purpose of expressing invisible operations of the mind, is unquestionably more wonderful even than language. We, it is true, are not accustomed to regard alphabetic writing with surprise and wonder, because we have been familiar with its use from our earliest years, and have seldom or never given ourselves the trouble of reflecting upon the nature of it; just as we can pass on without standing to gaze with admiration and wonder on the glorious sights around and above us, the diversified and smiling earth, the boundless and sublime ocean, the blue ethereal sky, and all the host of heaven!

It is remarkable that some of the most learned and most intelligent of the heathen writers, including Plato and Cicero, have attributed the origin of alphabetic writing to the gods; so much did they consider the invention of it above the ingenuity of man. But, as I said before, the great majority even of Christian writers regard alphabetic writing as much the invention of man as *pictorial* representations and *hieroglyphic* symbols. There is no doubt of *pictures* and *hieroglyphics* being the invention of man, nor that they were employed for the same purpose as alphabetic writing; but I apprehend that the difference between the latter and the former signs is as great as the difference between inarticulate or natural sounds, and *spoken words*, or language. Pictures and hieroglyphics are signs for *things* which are either naturally or symbolically represented, but alphabetic characters are signs for *words*, with which they have no kind of connection or relation. I shall now state briefly the indirect proofs from Scripture of the divine origin of alphabetic writing.

The oldest, and, as we have every reason to believe, the first book that was written, is the Bible: and it is highly probable that Moses was instructed in alphabetic writing, for the special purpose of writing that blessed book. It is true that Moses is silent on this subject; but had it been a human invention, it is probable that he would have recorded it, as he did other inventions, as tent making, playing on wind and stringed instruments, working in brass, &c. Supposing the use of the alphabet to have been communicated to Moses by God, his silence on the subject is only another proof of his great modesty. In the 31st chapter of Exodus, verse 18, we are told, that after the end of the communing upon Mount Sinai, two tables of testimony on two tables of stone, written with the finger of God, were given to Moses. And in the 34th chapter of the same book, verse first, we read—"And the Lord said unto Moses, Hew thee two tables of stone like unto the first, and I will write upon these tables the words that were on the first tables, which thou brakest." It is true that Moses must have had a knowledge of writing previous to this, on the supposition that he recorded the event in the exact order of time; for in a preceding chapter (the 17th, verse 14,) we find that he was commanded "to write for a memorial in a book," the discomfiture of Amalek and his people by Joshua. But this memorial, supposing the defeat of Amalek to have occurred before his sojourn in the mount, might have been of a hieroglyphic nature. I shall not dwell longer on this point, except to add what I consider a very strong argument. The Hebrew alphabet is universally admitted to be the most ancient; and almost all other ancient alphabets bear so strong a resemblance to it, that they may be considered as derived from it as a common source. The Roman alphabet, for instance, which we and almost all the nations of Europe use in common, is formed, with some variations, from the Greek; and the Greek alphabet can be easily traced through the *Phœnician* to the Samaritan or *Hebrew*. In deriving the Greek from the Hebrew alphabet, we must take the old Greek letters, as copied from ancient inscriptions; and we must also invert them from right to left, as they were originally read, and as the Hebrew still continues to be read. Now, if the Hebrew alphabet be the most ancient this is another proof of its divine origin; for it is not to be supposed that the Hebrew people, before the time of Moses, at which early age we find it in use, would think of such an invention. But while the antiquity of the Hebrew alphabet is admitted, the general, indeed almost universal *supposition* is, that *alphabetic* characters were invented in Egypt, and that Moses, who was learned in all the wisdom of the Egyptians, carried them with him into the land of Canaan and taught them to his countrymen. Even the name of the Egyptian who is said to have invented alphabetic writing has been given; but this is mere conjecture, if not fable. His office, too, has been added—to wit, secretary to an Egyptian king; and the circumstance which led him to invent alphabetic characters, namely, that he might be able to keep up a secret correspondence with the leaders of Pharaoh's armies.

I shall now give you an account of *pictorial* and *hieroglyphic* writing, which, according to the general opinion, led to the invention of *alphabetic characters*.

Imitation is so natural to man, that some of the old philosophers defined him to be an imitative animal. This principle is particularly observable in children. There is scarcely a thing which a child sees done that he will not attempt to do himself. To this principle may be traced *picture drawing*, which almost every child attempts the moment he gets a pen or pencil into his hand. We may all recollect how fond we were, in our schoolboy days, of covering our copy-books and our slates with the figures of animals, known and unknown. Now man, as a rational and social being, soon turned this natural propensity to advantage. When he wished to convey information about objects, and even events, to persons not present, he drew a *picture*, either of the thing itself, or a *symbolic* representation of it. For instance, to signify that one man had killed another, they drew the figure of one man extended on the earth, and another standing over him with a deadly weapon in his hand.

This *pictorial* representation was the first attemp tat writing. The *symbolic*, or, as it is usually called, *hieroglyphic* representation, is an improvement upon this; for *pictures* could be employed only for the purpose of delineating sensible objects and external events, whereas by *hieroglyphics* could be conveyed information about invisible and intellectual objects. Thus a *circle*, because it has neither beginning nor end, was used to denote eternity; an *eye* was the symbol of knowledge; a *lion*, of courage and strength; and a *horse*, of speed and liberty. The invention of a regular system of hieroglyphics is universally attributed to the Egyptians; but this symbolic method of writing, and even speaking, has been adopted by almost every nation. When Darius entered the country of the Scythians as an invader, their prince sent him a *bird*, a *mouse*, a *frog*, and an *arrow*. This symbolic way of speaking was as well understood by the civilized Persians as by the barbarous Scythians; for they at once, as the historian informs us, comprehended it to mean, that unless they could ascend into the air like birds, or conceal themselves like mice in the earth, or plunge into the fens like frogs, they should inevitably perish by the arrows of the Scythians.

In the New World, too, particularly in Mexico, we find picture-writing and a species of hieroglyphics in use. Robertson, in his history of America, after describing the first interview between Cortes and the native Mexicans, adds—

> "During this interview, some painters in the train of the Mexican chiefs had been diligently employed in delineating, upon white cotton cloths, figures of the ships, the horse, the artillery, the soldiers, and whatever else attracted their eyes as singular. When Cortes observed this, and was informed that these pictures were to be sent to Montezuma, in order to convey to him a more

lively idea of the strange and wonderful objects now presented to their view than any words could communicate, he resolved to render the representation still more animated and interesting, by exhibiting such a spectacle as might give both them and their monarch an awful impression of the extraordinary prowess of his followers, and the irresistible force of their army. The trumpets, by his orders, sounded an alarm; the troops in a moment formed in order of battle; the infantry performed such martial exercises as were best suited to display the effect of their different weapons; the horse, in various evolutions, gave a specimen of their agility and strength; the artillery pointed towards the thick woods that surrounded their camp, were fired, and made dreadful havoc among the trees. The Mexicans looked on with that silent amazement which is natural when the mind is struck with objects which are both awful and above its comprehension. But at the explosion of the cannon many of them fled, some fell to the ground, and all were so much confounded at the sight of men whose power so nearly resembled that of the gods, that Cortes found it difficult to compose and re-assure them. *The painters had now many new objects on which to exercise their art, and they put their fancy on the stretch in order to invent figures and symbols to represent the extraordinary things which they had seen. Messengers were immediately despatched to Montezuma with those pictures.*"

It appears by this that the Mexicans were perfect masters of *pictorial* and *symbolic* representation; but they had not, notwithstanding their progress in civilization, made any advance towards alphabetic or arbitrary signs. Charlevoix, a French writer, gives a similar account of the North American Indians:—"Quant aux caractères ils n'en avaient point; et ils y suppleaient par des especes d'hieroglyphics." As to letters, they have none; and they supply the place of them by a species of hieroglyphics.

To return to the Egyptians, it is the general opinion that hieroglyphic writing was an invention of their priests for the purpose of mystifying and concealing their learning from the people, and hence is derived the term *hieroglyphic*, which means in the Greek language *sacred engraving* or writing. As hieroglyphic inscriptions abound in all the ancient Egyptian temples, this opinion appears to be correct. But *symbolic* representation is so plainly an extension of, and improvement upon *pictorial* writing, that there is no reason nor necessity for considering it a distinct invention.

In their first attempts at conveying information by writing, people naturally sketched a rude resemblance or picture of the thing itself; and when this mode was found insufficient and defective, as it soon must, they, like the native Mexicans, upon the arrival of Cortes and his troops, "put their fancy on the stretch in order to invent figures and symbols to represent the extraordinary things they had seen." Such symbols and figures, therefore, are the natural and certain results of communication by pictures, which, I observed before, may be traced to the principle of imitation so natural to man.

It is not surprising, however, that the Greeks, from whom we derive our information on the subject, considered hieroglyphics an invention of the Egyptian priests, for the purpose of giving an air of mystery to their learning and religion. It was by those priests that the art was cultivated and brought to so high a state of perfection; and it was by them that it was kept up, and I may say, monopolized, so long after the introduction of alphabetic characters had rendered it unnecessary. That they continued to practise it after it had fallen into general disuse, was doubtless for the purposes of mystification and concealment; but all I mean to say is, that the purpose for which it was subsequently used was not the original cause of its invention.

As *pictorial* resemblances led to symbolic or *hieroglyphic* representations, so the latter led to arbitrary marks or characters, which may be denominated the third stage of writing. These marks or characters are called arbitrary, because they are made to represent things to which they have no resemblance, either pictorial or symbolical. This was a great improvement in writing, for to represent objects and events by pictures and symbols, was a most tedious, cumbersome, and, in many cases, an impracticable process. Arbitrary marks resulted from *symbolic* figures in this way. In process of time these figures, for the sake of convenience and despatch, would naturally be abbreviated, and consequently changed in appearance. And because these abbreviations or contractions had lost all resemblance to their original figures, they naturally came to be used as arbitrary marks or signs of things to which they had no resemblance whatever, either pictorial or symbolic. The credit of this improvement is given to the Chinese. The Egyptians joined symbolic or characteristic marks to images; the Chinese threw out the images, and retained only the abbreviated marks, which they used and still continue to use as arbitrary signs of things or ideas. It is stated by competent authority (Du Halde and others), that the Chinese have at least 80,000 of these arbitrary marks or characters. This we may well believe when we consider that every object, and every idea, and every combination of ideas, has its own distinctive mark or character; for their marks are not like our letters, signs of the simple sounds of the human voice, which are few in number, but the signs of objects and ideas, which are almost without limit. In fact, the Chinese *characters* are more than two hundred times as numerous as their words, which it is stated do not exceed three hundred and thirty. But though in form their words amount to but three hundred and thirty, yet in use their number is increased at least seven-fold. By varying the accent and the tone, by aspirations and other alterations of the voice, the Chinese make one word signify several different and distinct things. For instance, the word *ya* in their language signifies, according to the accent or intonation given to it, *god, dumb, excellent, stupidity, goose.* In a work written five hundred years before the Christian era, the Chinese speak of their *ancient* system of education, and though that system has been kept up without interruption till the present day, they have scarcely advanced a step in literature and science; nor is this surprising, since to learn *their* alphabet is the labour of a whole life. Their alphabet does not, like ours, consist of characters representing the few simple elementary sounds of the human voice, but of distinct marks for every object and every idea which they know or can conceive—in fact, there is no end to learning the Chinese characters. That the Chinese characters are the signs of things, and not of *sounds* or words is plain, from the fact that the inhabitants of Japan, Tonquin, and Corea, can correspond intelligibly with them in *writing*, though ignorant of each other's language, merely because they employ the same written characters. As an illustration of this, let us suppose that the French and English nations happened to employ the same marks to express the same things—say a circle ○ to denote *day*, and a semicircle (*night*, it is evident that we could understand each other by means of such marks, though the *words* employed by us to express the same things may be very different. In this case, though the marks would excite the same ideas in the minds of both, yet what we would call *day* and *night*, the French call *jour* and *nuit*. But I need not suppose a case for the purpose of illustrating the Chinese characters. The figures that we use in common arithmetic are of precisely the same nature. The figures 1, 2, 3, 4, 5, 6, &c., for instance, are understood by half the world to denote certain fixed numbers, while the names are different in almost every country.

I have now gone over the several kinds of writing which were beyond doubt the invention of man, viz.—First, the *pictorial*, as practised by the Mexicans, and by all nations in their first attempts at conveying information by graphic sketches. Second, the *symbolic* or *hieroglyphic*, an improvement and extension of the former, which, as we have seen, was brought to a high state of perfection, and as is generally believed, invented by the Egyptians. Third, *arbitrary marks or characters*, as employed by the Chinese. But we are as far as ever from *alphabetic* writing, which, as I observed before, differs as much from the preceding methods, as language does from inarticulate sounds. But I am bound to state that the general, indeed almost universal opinion is, that arbitrary marks led to alphabetic characters. Dr. Warburton, who is certainly very high authority, asserts that "the Chinese characters are on the very borders of letters, and that an alphabet invented to express *sounds*, instead of *things*, was only a compendium of that large volume of arbitrary marks." But if the Chinese arrived at the borders of letters two thousand years ago, it is strange that they have never yet succeeded in crossing them. Surely, this proves that there must be an insuperable barrier between an alphabet of *things* and an alphabet of *sounds*. I shall, however, state the process by which it is generally believed alphabetic characters proceeded from arbitrary marks or signs of things. I quote from Dr. Blair:—

"At length in different nations men became sensible of the imperfection, the ambiguity, and the tediousness, of each of these methods of communication with one another; they began to consider, that by employing signs which should stand, not directly for things, but for the words which they used in speech for naming these things, a considerable advantage would be gained; for they reflected farther, that though the number of words in every language be indeed very great, yet the number of articulate sounds which are used in composing these words is comparatively small. The same simple sounds are continually recurring and repeated, and are combined together in various ways, for forming all the variety of words which we utter. They bethought themselves, therefore, of inventing signs, not for each word by itself, but for each of those simple sounds which we employ in forming our words; and by joining together a few of these signs, they saw that it would be practicable to express in writing the whole combination of sounds which our words require.

"The first step in this new progress was the invention of an alphabet of syllables, which probably preceded the invention of an alphabet of letters, among some of the ancient nations; and which is said to be retained to this day in Ethiopia, and some countries of India. By fixing upon a particular mark or character for every syllable of the language, the number of characters necessary to be used in writing was reduced within a much smaller compass than the number of words in the language. Still, however, the number of characters was great, and must have continued to render both reading and writing very laborious arts; till, at last, some happy genius arose, and tracing the sounds made by the human voice to their most simple elements, reduced them to a very few vowels and consonants; and by affixing to each of these the signs which we now call letters, taught men how, by their combination, to put in writing all the different words, or combinations of sounds, which they employed in speech. By being reduced to this simplicity, the art of writing was brought to its highest state of perfection, and in this state we now enjoy it in all the countries of Europe. To whom we are indebted for this sublime and refined discovery, does not appear. Concealed

> by the darkness of remote antiquity, the great inventor is deprived of those honours which would still be paid to his memory by all the lovers of knowledge and learning. It appears from the books which Moses has written, that among the Jews, and probably among the Egyptians, letters had been invented prior to his age. The universal tradition among the ancients is, that they were first imported into Greece by Cadmus, the Phœnician, who, according to the common system of chronology, was contemporary with Joshua; according to Sir Isaac Newton's system, contemporary with King David."

That pictorial representations led to symbolic figures, and symbolic figures to arbitrary characters, is evident enough; and that all these modes of writing are the invention of man, is also beyond question: but that arbitrary signs for things should lead to alphabetic characters, that is, to arbitrary signs for the elementary sounds of the human voice, is a supposition, which when I consider the amazing difficulty of the process, and the early age of the world in which it must have been accomplished, seems to me to be at variance with right reason. I shall not, however, re-enter upon the subject, but leave it, after quoting the following argument from the learned Dr. Wall, to your own consideration. Dr. Wall, I need scarcely add, is a distinguished fellow of our University.

> "Now, as it was never attempted to show that letters were invented except through this medium, the argument might perhaps be considered decisive against their ever having been in any way discovered by man. However, to meet the general question more directly, and point out the extreme improbability of their having been at all derived from human invention, through any medium whatever, it may be still farther urged, that even supposing man had, by his own efforts, arrived in some unaccountable manner at a phonetic use of signs, he would yet be immeasurably distant from an alphabetic one. The possibility of the two steps which he would yet have to take in order to get to letters, is almost as inconceivable as the first one, to which, it has been already proved, he never could have been conducted by the nature of the case. In the first place, let us inquire what motive he could have for decompounding all the words, or at least all the ordinary words of his language, without doing which he never could discover the alphabetic principle: and in order to view the operation, as performed in the easiest manner, I shall

only consider him as proceeding in it till his arrival at simple articulate sounds, and put out of sight the still more difficult steps by which those sounds would have again to be resolved into their *sonant* and *consonant* elements. Now, if he knew beforehand that by making this decomposition, he could reduce all the elementary sounds of his language to a limited number, requiring, consequently, for their expression only a limited number of signs, he would have a very strong inducement to the process, because he would thereby, in the decomposition of his words, be able to represent them all in a manner that would save him an infinity of trouble. But if he was not previously aware of this, this decompounding words merely to compound them again, would only be a waste of his time and labour. Here there lies an impediment in the way of his ever having set about constructing an alphabet of even the rudest and most imperfect nature; he never could discover the alphabetic principle till he had first made the above-mentioned decomposition, and he could have no possible motive for making this till he had first known the alphabetic principle.

"If it be said that it has been already supposed that he has got signs of some of those articulate sounds, and that he might be possibly induced, from analogy, to search for the rest, in order to give them also signs; in this way of stating the case, there is a tacit assumption of his being aware that the rest constitutes a limited number; that is, it is tacitly assumed that he already knows the alphabetic principle, though his first approach to the discovery of this principle is the very thing which it is wanted to account for. However, putting the impediment for a moment out of view, and supposing our investigator has gone through the very laborious process of decomposition, let us, in the next place, consider what yet remains behind to be effected by him. Before he can discover the limitation in question, and determine the sounds whose signs are to constitute his alphabet, he must classify and arrange all the decompositions made by him; and to effect this he can derive no help from the phonetic signs already conceded to him, because, be it recollected, he is not yet supposed to know the alphabetic principle, and consequently he will have affixed those signs without any method—giving the same sign to different sounds, and different signs to the same sound; he must, therefore, go through the process of classification entirely in his own mind, without any aid from external marks, and thus at length discover that the number of classes is limited. Now that the human mind with the strongest powers, in the highest state of cultivation, should take in so extensive a subject at one view, is hardly conceivable; but that any man should have been equal to this in the very early times to which the use of alphabetic writing can be traced back, is quite beyond the reach of credibility."

MECHANICS.

[This and the two following articles were written by the author about ten years ago, for Cumming's edition of "Turner's Introduction to the Arts and Sciences;" and as several intelligent instructors of youth have assured him that they found them to answer the purposes for which they were intended, namely, an EASY INTRODUCTION to these studies, he has been induced to give them a wider circulation by re-publishing them here.]

Q. What is MECHANICS?

A. That science which teaches the nature and laws of motion, the action and force of moving bodies, and the construction and effects of all those machines and engines which go by the name of mechanic powers. The term is derived from the Greek word μηχανη, a *contrivance* or *machine*.

Q. What are MECHANIC POWERS?

A. Machines which are used for raising greater weights, or for overcoming greater resistances, than could be effected by natural strength without them.

Q. How many mechanic powers are there?

A. They are said to be six in number, viz. the *lever*, the *pulley*, the *inclined plane*, the *wheel* and *axle*, the *wedge*, and the *screw;* but as the wheel and axle may be reduced to the lever, and the wedge and screw to the inclined plane, there are, properly speaking, but three mechanic powers.

Q. What is the MOMENTUM of a body?

A. The force with which a body moves is called its momentum;* and as this force depends upon the *weight* and *velocity* of the moving body, the momentum of any body may be found by multiplying its weight into its velocity, or the space which it moves over in a given time. Hence, the momentum of a small body may be made equal to that of a very large one, if the velocity of the small body exceeds that of the large one, by as much as the weight of the latter exceeds that of the former. Thus, if two stones, one of *two* pounds weight, the other of *four*, be thrown with *equal* velocity, the momentum of the latter will be *double* that of the former, or, in other words, it will strike with *twice* the force; but if the velocity of the smaller stone be *double* that of the larger one, their *momenta*, or the forces with which they strike, will be equal.

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* Momentum, for *movimentum*, from the Latin *moveo*, to *move;* as fermentum, for *fervimentum*.

Hence we see that the moving force or power is increased by increasing its *velocity;* and it is upon this principle that all the mechanic powers are constructed. Thus, if a stone of 2 *cwt.* is to be raised *two* feet high, by a person who can lift only *one-third* of this quantity, he will be able to effect it, if he can *contrive* to make his arms move *six* feet while the stone is moving the *two;* because the *deficiency* of the power, which is, in this case, to the weight to be raised, as 1 to 3, will be made up by its *velocity,* which is to that of the weight as 3 to 1, or three times as great.

Q. But how can he contrive to do this?

A. By applying to it a *mechanic* power, which term, as I stated before, originally signified a *contrivance.*— I shall now give you a description of the mechanic powers. The first is the LEVER, which is merely a straight bar of iron or wood, supported by, and movable round a fulcrum or prop. The term is derived from the Latin verb *levare, to raise* or *lift up.*

There are three circumstances to be principally attended to in the lever. First, the *fulcrum* or prop, by which it is supported, or on which it turns as an axis or centre of motion. Second, the *power* to raise or support the weight. Third, the *resistance* or weight to be raised or sustained.

There are three kinds of lever, which are determined by the different positions of the power, the prop, and the weight. The first and most common kind is when the prop is placed between the power and the weight; as in crowbars and handspikes. A poker, when used in stirring a fire, exhibits a lever of the first order; the hand is the power, the bar upon which it rests is the prop, and the coals are the weight or resistance.

Q. What is the advantage gained by this mechanic power?

A. The advantage gained by the moving power or person will be in proportion as the distance from the power to the prop exceeds the distance from the prop to the weight: thus, if the part of the lever between the hand and the prop be *ten* times as long, as that part between the prop and the weight, a man, by the assistance of the lever, could raise *ten* times as much as he could without it.

Q. How do you explain this?

A. Because the velocity of the power is *ten* times as great as the velocity of the weight, or in other words, the *hand* moves *ten* feet while the *weight* is raised *one*.

Q. Do you now see how a person could raise up to the height of two feet a stone of 2 *cwt.*, though his natural strength will allow him to raise but *one-third* of that quantity?

A. I do indeed; he has only to apply a lever to it, in such a manner that the arm of the lever between his hands and the prop may be *three* times as long as the arm between the prop and the stone; by which the *velocity* of the power will be increased *threefold*, which exactly makes up for its deficiency.

Q. Do you recollect what Archimedes said with respect to this simple machine?

A. Yes; he said he could move the earth itself, if he had a place to stand on, and a fulcrum to rest his lever upon.*

To levers of the first order may be reduced many common instruments, such as *scissors, pincers, snuffers, curling irons*, &c., which are composed of two levers, acting in a contrary direction to each other. The rivet is the fulcrum, the fingers the power, and the substance to be cut or pressed is the weight or resistance.

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* Dic ubi consistam, terram cœlumque movebo.

The common balance, and the steel-yard or *Roman statera,* which is used principally for weighing butcher's meat, are levers of the first kind. A hammer, when used *in drawing* a nail, is a very powerful *lever* of the first order; but in *driving* one, the principle of the *wedge* is exemplified.

Q. Why do you say a *very powerful* lever?

A. Because the prop is almost beside the weight or resistance, whereas the power is the whole length of the handle of the hammer from it.

Q. What is the second kind of lever?

A. When the power is at one end, the prop at the other, and the weight applied between them, it is a lever of the second order.

To this kind of lever may be reduced the oars of a boat, the rudder of a ship, and a door moving upon hinges. The vessel is the weight or resistance, the water the fulcrum, and the person who directs the motion the power. And in the case of the door, the hand by which it is moved is the power, the body of the door, the weight, and the hinges are the fulcrum or centre of motion. In opening or shutting a heavy door or gate, you can at once convince yourself of the advantage gained by means of this mechanic power—put your hand on the side near the hinges, and you will find some difficulty in opening and shutting it, but apply it to the side on which the lock is fixed, and you will effect it with ease.

Q. What is the third kind of lever?

A. The third order of lever has the prop at one end, the weight at the other, and the power applied between them. As the moving power or person receives no assistance from this kind of lever, it is used in cases of necessity only; as in raising a ladder against a wall, in which case the end of the ladder, fixed against the ground or some obstacle, is the prop, the exertion of the man or men is the power, and the body of the ladder the weight or resistance.

Q. Why does the power gain no advantage by this kind of lever?

A. Because its *velocity* is not increased, but on the contrary it is greatly diminished; for the *weight* being farther from the centre of motion or *fulcrum* than the *power*, it must consequently pass through a greater space in the same time than the power, *i. e.* the velocity of the power is diminished, while that of the weight is increased by this order of lever.

The limbs of animals in general, and the structure of the human arm, are levers of the third order. This, at first view, may appear a disadvantage, but in these cases *velocity* is of more importance than *power*, which this structure of the limbs of animals is admirably calculated to produce. Thus we see that the goodness of God is manifest in all his works.

In the human arm, for instance, the elbow is the fulcrum or centre of motion, round which the lower part of the arm turns; the muscles, which come from the shoulder-blade and terminate a little below the elbow, are the power; and the weight is whatever is raised by the hand. Now, as in this case the hand is about *ten* times more distant from the elbow than the termination of the muscles is, the muscular force exerted must be *ten* times as great as the *weight* that is raised; but then the weight moves with *ten* times the *velocity*, by which organization our hands are enabled to perform all their functions with great rapidity.

Q. Will you describe the PULLEY?

A. The pulley is a small wheel that turns about its axis, and which has a drawing rope passing over it, one end of which is fastened to the weight, while one or more persons pull the other, and thereby raise the weight. This is the *fixed* pulley, which, though it does not increase the power, is yet of great advantage in changing its direction, and in raising weights to great heights, which otherwise a person would have to ascend with. Thus a man may remain on the ground, and raise by means of a pulley, a weight to the top of a house. His own weight too, by hanging on the rope, will add greatly to his strength or power.

Q. What are *movable* pulleys?

A. Pulleys which rise and fall along with the weight; and which increase the power in proportion to their number: thus, *two* acting pulleys increase the power *four* times; *three*, *six* times, and so on.

Q. In this mechanic engine, does the increase of power depend upon the increase of its velocity?

A. Certainly; for if two pulleys be used, the hand of the person who pulls the rope moves over *four* times the space that the weight does, in the same time; and if *three* pulleys be used, the velocity of the hand or power is *six* times as great as the weight, and so on.

In the use of the pulley, or of a *system* of pulleys, the advantage which might be gained is greatly diminished by the friction of the axles and of the ropes.

Q. What is the INCLINED PLANE?

A. This is a very simple machine, and is formed by placing boards or earth in a sloping direction, or in other words, by making a *plane* surface *inclined* to the horizon; by which means heavy bodies are rolled up to places where they could not otherwise be brought without great difficulty. The advantage gained by this mechanic power is in proportion as the length of the plane exceeds its perpendicular height. Thus, if a person whose strength is equal to but 2 cwt., is required to raise a cask of 6 cwt. to an elevation of *five* feet, he will be able to roll it up by forming an inclined plane of *fifteen* feet long.

Q. Will you favour me with a description of the WHEEL and AXLE?

A. It consists of a wheel fixed to the end of an axle, which turns along with the wheel, by which means a rope that is tied to the weight at one end, and fastened to the axle at the other, is wound about the axle, and consequently draws up the weight. The advantage the person or moving power derives from this machine, is in proportion as the circumference of the wheel exceeds that of the axle. Thus, if the circumference of the former be *ten* times as great as the circumference of the latter, a man by means of this mechanic power will be able to raise *ten* times as much as he could without it.

The reason of this is obvious. For in this case the power or hand acting at the circumference of the wheel, moves over *ten* times the space which the circumference of the axle (and consequently the weight appended to it) does in the same time; or in other words, the velocity of the power is to the velocity of the weight as ten to one, which exactly makes up for its deficiency.

When this machine is used for drawing water from a deep well, an iron handle supplies the place of a wheel, which by its *circular* motion answers the same purpose, particularly as it requires but little power to raise a single bucket of water.

Q. Why does the bucket seem *heavier* as it ascends nearer the top?

A. I have already explained to you, that the advantage gained by this mechanic power, is in proportion as the circumference of the wheel exceeds that of the axle; now, as the bucket ascends, the rope continues to coil round the axis, by which the *difference* between its circumference and that of the wheel *diminishes*, and that in proportion as the bucket is raised nearer the top.

Q. Since this is the case, should not the axle be made very small, and the handle or winch very long?

A. If the handle were made much longer than it usually is, the human arm would be too short to turn it; and if the axle were too much diminished, it would be too weak to sustain the weight; besides, the less difference there is between the circumference of the axle and that of the wheel (or circle described by the handle) the quicker will the weight ascend, which, in raising water, is very desirable.

Q. Are not cranes, windlasses, wind and water mills, &c., constructed on the principle of the *wheel* and *axle?*

A. Certainly; and the power, whether it be men, wind, or water, is applied to the circumference of a large wheel, which, by turning, moves its axle, by which the weight is raised or resistance overcome.

Q. What is the WEDGE?

A. The wedge may be considered as *two equally inclined planes*, united at their basis. In cleaving timber with a wedge, the force of the mallet which strikes it is the moving power, and the cohesion of the parts of the timber is the weight or resistance. Generally speaking, the advantage gained by means of this simple mechanic power will be in proportion as the length of the two sides exceeds the thickness of the back.

Wedges are of great assistance to ship-builders; by means of them they are enabled to raise to a small height, ships of the largest size. To the wedge may be reduced the axe or hatchet, the teeth of saws, the chisel, the auger, the spade, knives, swords, needles, and all sorts of instruments which beginning from edges or points grow gradually thicker.

Q. Are not soldiers formed sometimes into the shape of a wedge?

A. Yes; when they wish to cut their way through the enemy's line. The bravest men, of course, form the point of the wedge. In Cæsar's Commentaries, near the end of the Sixth Book, there is an interesting account of the success of this military evolution.

Q. What is the SCREW?

A. The screw is an inclined plane, used with a lever or winch to assist in turning it. It is chiefly used to press the parts of bodies together, and in some cases to break and divide them.

The advantage gained by this mechanic power, is in proportion as the circumference of the circle, described by the power or hand which turns the winch, exceeds the interval or distance between the spirals or threads of the screw.

As I mentioned before, the screw is an inclined plane, and if a lever be added to it, as in machines for coining, printing presses, &c., a man may multiply his power many thousand times.

Q. How do you show that the screw is an inclined plane?

A. Cut a piece of paper in the form of an inclined plane, and wrap it round a cylinder, and you will see that the edge of the paper will form a spiral line answering to the threads of the screw.

Q. Are not the effects produced by a combination of the mechanic powers very surprising?

A. I have merely given you a brief description of the effects produced by *simple* mechanic powers, but when they are *combined,* as in machinery, the advantage gained by them is, in some cases, almost beyond belief. In some instances, *one* man is enabled, by machinery, to lift up a weight which the united strength of five hundred men could not even move.

THE STEAM ENGINE.

Q. What is STEAM?

A. Steam is a vapour expelled from fluids by the action of heat. Heat, when communicated to a fluid body, as water, increases its temperature till it rises about 212 degrees of the common thermometer, or to what is termed the *boiling point.* Beyond this point the temperature of water does not rise; consequently if heat be still communicated to it, it will cause it to evaporate or rise in *steam.* The expansive force of this steam, or vapour, is so great, that, if it has no means of escaping, no vessel, however strong, could for an instant confine it.

If a vessel containing water or any liquid body be closed at the top by an air-tight lid, and placed upon the fire, the force of the steam, as soon as the water begins to boil, will drive up the lid. It was this simple and familiar fact accidentally observed by a philosophic eye, which led to the discovery of the extraordinary power of steam, and its application to mechanical purposes.

Another property of steam is, that it can, by decreasing its temperature, be instantly reduced to its original state of fluidity. This is effected by bringing some cold body into contact with it:—thus, if a jet of cold water be made to play through a vessel filled with steam, the cold water, by extracting the heat from the steam, will cause it to descend in drops. This process is called the *condensation* of steam; and it is used for the purpose of creating a *vacuum*; for when the expanded vapour is condensed into drops, the space which it occupied (the air being previously expelled from it) becomes actually vacant.

I shall now give you a description of the *principle* on which steam-engines are constructed. Steam from a boiler is conveyed by a tube into a hollow iron cylinder, with a movable lid, which is driven up as the steam rushes in below it, and descends when the steam is *condensed* by a jet of cold water, which is made to play through the cylinder for that purpose. The motion of the lid of the cylinder is communicated by means of an iron rod to the end of a large beam, which is consequently driven up and pulled down, as the steam in the cylinder expands and condenses. It is the action of this large lever or beam by which the whole of the machinery annexed to the steam-engine is put into motion.

Q. I see very clearly that the lid of the cylinder is driven up by the expansion of the steam; but what causes it to descend?

A. When a *vacuum* is formed below the lid by condensing the steam, it is driven down by the weight of the atmosphere, the pressure of which is equal to about 15 lbs. to the square inch.

It is to a steam-engine constructed on this principle, and to its inventor, Captain Savary, that the following lines of Dr. Darwin allude:—

> Made, with cold streams, the quick expansion stop,
> And sunk th' immense of vapour to a drop;
> Pressed by the pond'rous air, the piston falls
> Resistless, sliding through its iron walls;
> Quick moves the balanc'd beam, of giant birth,
> Wields his large limbs, and nodding, shakes the earth!

Q. Was Captain Savary the inventor of the steam-engine?

A. The original inventor was the Marquis of Worcester, who, in the year 1663, described its principle in a small publication, entitled, "A Century of Inventions." About fifty years after, Captain Savary, having in all probability seen the Marquis of Worcester's plan, succeeded in constructing a steam-engine, for which he obtained a patent.

Savary's engines were used for the purpose of raising water from wells, and draining coal mines, &c. And had the utility of the steam-engine extended no farther than this, it would, notwithstanding, have been an invention of the greatest importance to mankind, particularly to the inhabitants of Great Britain and Ireland.

Q. Why to the inhabitants of these countries in particular?

A. Before the steam-engine was invented, almost all the *coal mines* in Great Britain were excavated as deep as they could be worked, without the assistance of some mighty power to carry off the water, which, when the earth is dug to a certain depth, pours in on every side. This power was supplied by steam. At the sides of the pits, engines are erected, which, by being kept constantly at work, pump up the water, and consequently enable the miner to excavate to any depth.

Q. To whom are we principally indebted for the great improvements and increased utility of the steam-engine?

A. To the ingenious James Watt, a native of Scotland, who, in the year 1762, began to turn his attention to this machine. Among other improvements, Mr. Watt closed the top of the cylinder by an air-tight cover, through which the piston-rod works, and injected steam above the piston as well as below, so that the *motion downward is produced by the elastic force of steam*, as well as that upward. Mr. Watt may, therefore, be said to be the inventor of the steam-engine; for, in the machines constructed on Captain Savary's plan, *one half* of the motion was produced by the *pressure of the atmosphere*. Another important improvement of Watt's, was the condensation of the steam in an adjoining vessel, for the purpose of forming the vacuum under the piston.

Q. But how did he contrive to make the piston-rod play through the top of the cylinder, without permitting the steam to escape, and admitting the external air?

A. By running it through an air-tight collar, furnished with a stuffing-box, which is kept constantly filled with melted tallow or wax.

Q. To what purpose is the steam-engine principally applied?

A. The ingenuity of man has rendered the power of steam subservient to almost all the labours of civilized life. In many cases, it has rendered human, and even animal labour, altogether unnecessary. And the work which was formerly performed by the agency of wind or water, as in driving the machinery of corn, cotton, and paper mills, is now very generally executed by the more certain and permanent power of steam. In short, as there are no bounds to the power, so there seem to be no limits to the utility of steam. By it we are enabled to fly over both sea and land with a rapidity, which, if it were not proved by actual experience, would seem to the minds of most men as altogether impossible. And who knows, if the march of improvement continues to progress, but we may live to see the prediction in the concluding lines of the following verses verified, as we have seen those contained in the first and second?

Soon shall thy arm, resistless steam! afar
Impel the barge, and drive the rapid car;
And on wide waving wings, expanded, bear
The flying chariot through the fields of air.
DARWIN.

To be serious, though there never can be flying chariots, except in the imagination of the poet, yet had the preceding lines been published a century or two ago, our ancestors would have considered it just as possible to drive a chariot, Phæton-like, through the air, as to travel on land, in a self-moving coach, at the rate of thirty miles an hour, and to cross the sea, not only without the assistance, but in direct opposition to the united forces of the wind and tide.

Q. Where was the first steam-boat launched?

A. At New-York, in the year 1807, about five years before the introduction of steam navigation in these countries.

Q. How is the vessel propelled?

A. The engine is fixed in the centre of the vessel, between the wheels, and as the piston-rod rises and falls, its motion is communicated to a crank, by means of which the wheels are turned, and the vessel is driven forward by the action of the paddle-boards on the water.

The first steamer, as I have already told you, was launched at New-York, and the ludicrous effects produced by her first arrival in Albany Bay, are thus described by an American writer:—"The first steamboats, as others yet do, used dry pine-wood for fuel, which sends forth a column of ignited vapour many feet above the funnel, and when the fire is stirred, a galaxy of sparks flies off, which in the night have a very brilliant and beautiful appearance. This uncommon light first attracted the attention of the crews of other vessels. Notwithstanding the wind and tide were adverse to its approach, they saw, with astonishment, that it was rapidly coming toward them; and when it came so near that the noise of the machinery and paddles was heard, the terror of the sailors was so increased, that many of them shrank beneath the decks from the terrific sight—some of them endeavoured to reach the shore in their boats—while others prostrated themselves on the decks, and besought Providence to protect them from the horrible monster which was marching over the waves, and lighting its path by the fire which it vomited!"

RAIL-ROADS.

Q. When were steam-carriages first used?

A. In 1806, Mr. Blenkinsop, of Leeds, had a steam-carriage constructed, which not only propelled itself along a rail-way, but drew after it a train of *thirty* coal-waggons.

Q. What is a rail-way?

A. A road made to facilitate and direct the motion of carriages, by forming the tracks in which the wheels of the vehicles are to run of bars or *rails* of wood or metal.

Q. How is the steam-coach propelled?

A. The ascent and descent of the pistons in the cylinder drive the crank rods, which give a rotatory motion to the wheels, to whose axles they are attached. The Manchester and Liverpool rail-road was the first which was constructed for the conveyance of passengers; and the signal success which has crowned this truly great and noble undertaking must, and indeed has led to the projection of rail-ways between all the great commercial towns of the empire.

Q. Is there such a thing as a *steam-gun?*

A. Yes; an instrument of this kind has been invented, by which 240 balls can be discharged every minute, with a force much stronger than that of gunpowder. And from another, differently constructed, the inventor, Mr. Perkins, succeeded in throwing a shower of balls at the rate of 1000 in a minute. But it is to be hoped, for the sake of humanity, that these deadly and destructive engines will never be adopted.

Q. Do not steam-engines consume immense quantities of coals?

A. Yes; and it is this circumstance which prevents steam-vessels from making long voyages at sea; but if the quantity of coals consumed be compared with the power produced by them, their consumption will not appear great. It is calculated that a small engine of ten horse-power would produce, by a single bushel of coals, a power which would grind and dress three sacks of wheat, slit and draw into nails five cwt. of iron, and drive at the same time 1000 cotton spindles.

GALVANISM.

Q. What is GALVANISM?

A. An interesting branch of the science of electricity, accidentally discovered by Galvani, an Italian, from whom it derives its name. It is also termed Voltaism, in honour of Volta, another Italian, the inventor of the voltaic pile or galvanic battery.

Q. How is Galvanism or galvanic electricity excited?

A. By forming a galvanic circle or circuit, *i. e.*, by bringing into contact, either two different metals and a fluid,* or two different fluids and a metal. Thus, if the lower edges of two plates, one of zinc, the other of silver, be applied to a diluted acid, and their upper brought either into actual contact, or connected by a conducting wire, a galvanic circle is formed, and a stream of electricity passes from the zinc to the acid, from the acid to the silver, from the silver to the zinc, and so on in a circuit while the bodies remain in contact, or as long as the chemical action between the acid and metal continues.

Q. How am I to know that the effects of such a combination are so?

A. If you apply two different metals, one to a nerve, the other to a muscle of a frog recently dead, and then bring the other ends of the metals into contact, the limb of the animal will become violently convulsed. It was this simple fact, accidentally observed, that led to the discovery of this interesting branch of physical science.

Q. What constituted the galvanic circle in this case?

A. The animal moisture, and the two different metals; and the convulsions of the limb were produced by the electricity, in its passage from the one metal to the other.

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* The fluid must be capable of exerting a chemical action on one of the metals, or, if on both, it must be in a different degree.

Q. Can you mention any other simple facts illustrative of galvanic influence?

A. Yes; long before the discovery of galvanism, it was known, that by placing two pieces of different metals, one upon the tongue, the other under it, and then bringing them into contact beyond the tip of the tongue, a peculiar and very powerful taste would be felt, though the metals, before they were brought into contact, had no perceptible flavour. The circle in this experiment is composed of the saliva on the tongue, and the two metals; and the strange sensation on the organs of taste, is occasioned by the electric fluid in its passage through the tongue, from the one metal to the other. If zinc and silver be used, and the experiment made in the dark, a faint flash of light will be seen, as often as the metals are brought into contact.

Again, if a leech be laid upon a silver crown, and the coin placed upon a piece of zinc of larger size, it will not seem affected while it remains on the silver only, but the moment it completes the circle, by extending itself so as to touch both the zinc and silver, it will suddenly recoil, as if it had felt a very painful shock. The three different bodies in this case, are the zinc, silver, and animal moisture.*

Every one must have observed, that if a silver spoon be used in eating eggs, it becomes tarnished and discoloured. This effect is produced by galvanic influence. The circle in this case is formed by the silver, the fluid of the egg, and the saliva on the lips.

Another very familiar fact may be accounted for by galvanic influence; I mean the peculiar flavour of porter, when drunk out of a pewter vessel. In this case there are two different fluids and a metal, viz., the saliva on the lips, the porter, and the pewter; and the circle is formed in the act of drinking.

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* The earth-worm, or any animal of the class of *vermes*, will, if placed on the crown, be electrified in a similar way at the moment of contact with the two metals; and if the *nais*, a species of water-worm, be used, the same effect will be still more strikingly exhibited.

Q. What is the VOLTAIC PILE OF BATTERY?

A. It is merely a compound galvanic circle, *i. e.*, it consists of an indefinite number of simple circles combined and arranged in uniform *triads*.

Q. How is it constructed?

A. Upon a silver coin place a piece of zinc of the same dimensions, and upon the zinc lay a piece of moistened cloth of the same form, but something smaller than the metals—upon the layer of cloth, place another silver coin, then a plate of zinc, and so on in regular triads, omitting in the last series the layer of cloth. This is a voltaic pile or battery in its simplest form; and if you apply a finger of one hand, previously moistened, to the upper plate, and a finger of the other hand to the lower metal, you will experience a shock in the arms, which will be greater or less in proportion to the number of the plates.

Q. How is the galvanic battery made to act on bodies?

A. If to this pile, which I have just described, two conducting wires be attached, one to the upper, the other to the lower plate, we can direct the current of electricity through any body we please, by merely bringing it within the circle, *i. e.*, by touching it at the same time with the ends of the conducting wires.

Q. What is the GALVANIC TROUGH?

A. This is the name given to the galvanic apparatus which is now generally preferred. It consists of a narrow *trough* of earthen-ware, or baked wood, in which are fixed alternately plates of zinc and copper. The battery is charged by filling the cells between the plates with diluted acid, and the galvanic circle completed by bringing the ends of the two conducting wires into contact. As any number of these troughs can be connected together by means of metal cramps, the power of such an apparatus can be increased to any degree of intensity.

The most powerful galvanic apparatus yet constructed, is the battery of the Royal Institution. It consists of two hundred troughs connected together; and as each trough contains ten double plates, and each plate thirty-two square inches, the whole number of double plates is 2,000, and the whole surface 128,000 square inches.

Q. Has not galvanism a peculiar effect on the nerves of animals?

A. So much so, that it was formerly supposed to be produced by some modification of electricity peculiar to the animal system,* and, in accordance to this supposition, was denominated *animal electricity*. But the irritability, and the peculiar delicate texture of the nerves, sufficiently explain the effects produced upon them by the application of electricity.

In illustration of the effects of galvanism on the nerves and muscles of the human body, I will give you a brief description of the interesting experiment performed by Dr. Ure, on the body of a criminal, about an hour after his execution, After having laid bare the spinal marrow, the sciatic nerve, and made a slight incision in the heel, the conducting wires were applied, one to the spinal marrow, the other to the sciatic nerve. "Every muscle of the body was immediately agitated with convulsive movements, resembling a violent shuddering from cold. On moving the second wire from the hip to the heel, the leg was thrown forward with such violence, as nearly to overturn one of the assistants. By varying the experiments, strong respiration was produced—the most extraordinary grimaces were exhibited—every muscle in his countenance was simultaneously thrown into fearful action; rage, horror, despair, anguish, and ghastly smiles united their hideous expression in the murderer's face, far surpassing the wildest representations of a Fuseli or a Kean." In short, many of the spectators were obliged to leave the room, from sickness or terror, and one gentleman fainted; which is not surprising, for the murderer seemed, by his convulsive movements and menacing gestures, every moment ready to rise, and avenge himself for the indignities offered to his person.

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* This was the opinion of Galvani and some others; but Volta showed that the electricity was elicited from the metals by the action of the animal moisture. This led him to construct the voltaic pile or galvanic battery, which triumphantly established his hypothesis.

Many similar experiments have been made on the bodies of criminals, but Dr. Ure's is the most interesting on record.

Q. Has the science of galvanism been applied to any practical purposes?

A. It has greatly extended our knowledge of chemistry. By means of the galvanic battery many substances, which were formerly considered to be simple and elementary, as the *alkalies*,* *earths*,† and *acids*, have been decomposed, and resolved to simpler forms of matter—Sir Humphrey Davy (to whom we are indebted for the most brilliant discoveries in chemistry) says, in his description of the effects produced by the galvanic battery of the Royal Institution: "When any substance was introduced into this arch it instantly became ignited; platina melted in it as readily as wax in the flame of a candle; quartz, the sapphire, magnesia, lime, all entered into fusion; fragments of diamond, points of charcoal, and plumbago rapidly disappeared, and seemed to evaporate in it. Such are the decomposing powers of electricity, that not even insoluble compounds are capable of resisting their energy; even glass, sulphate of baryta, fluor spar, &c., were decomposed when brought within the galvanic circle."

Q. Did not Sir H. Davy, by a galvanic combination, preserve the copper sheathing of ships from corrosion?

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* The bases of the alkalies and earths were found to be *metallic*. Hence the newly-discovered metals, potassium, sodium, magnesium, &c.

† Three of the four elements of the ancients, viz., *air*, *earth*, and *water*, have been decomposed by the moderns. Thus, AIR is found to be a compound of two different gases, *nitrogen* and *oxygen*; WATER is a compound of *hydrogen* and *oxygen*; and EARTH is found to consist of several different substances, now called earths.

A. He did; but to use a common but expressive saying, the remedy was worse than the disease; for, unless a certain degree of corrosion takes place in the copper, its surface becomes foul from the adhesion* of sea-weeds and shell-fish, by which the speed of the vessel would be materially affected.

Q. What were the principles on which Sir Humphrey proceeded?

A. If two different metals in contact (as zinc and copper) be immersed in a fluid, which exerts a greater chemical action on one of the metals (zinc) than on the other (copper), the action of the fluid will not affect the metal to which it has less affinity, till the other is oxydized or corroded. It is upon this principle, that small pieces of zinc, if attached to the copper sheathing of a ship, would completely preserve it from the corrosion of the sea-water.

Q. Why are *copper* nails used in fastening on the copper sheathing of ships?

A. When iron nails were used, it was found, (in consequence of the galvanic combination between the two different metals in contact, and the sea-water,) that they very soon corroded and dropped out. From a similar process, two different metals joined or soldered together, always tarnish and corrode at the place of contact. Hence it is that ancient inscriptions engraved upon *pure* lead, are still in a good state of preservation, while others, of no great antiquity, inscribed on *mixed* metals, are very much corroded.

Q. Is there any difference between galvanic and common electricity?

A. They were formerly supposed to be different fluids, but their complete identity has been fully established. All the common electrical experiments have been performed by the galvanic battery; and all the chemical effects of galvanism have been produced by electricity. Electricity and galvanism, however, differ in the mode of production: the former being excited by changes in the temperature of the atmosphere, and by friction; and the latter by the chemical action of fluids upon different metals in contact.

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* These plants and animals are destroyed by the corrosion.

Q. Are there not several fishes which have the power of giving a shock very similar to that given by a galvanic battery?

A. Yes; the *torpedo*, which was known to the ancients—the *gymnotus electricus*, or the electric eel—the *silurus electricus*, a species peculiar to some of the rivers in Africa—the *trichiurus indicus*, and *tetraodon electricus*, which are found in the Indian Ocean, possess the power of giving electric shocks to animals that touch them, or communicate with them by means of conducting substances. Nothing is known of the immediate source from which they derive their electrical properties; but it is a singular fact, that the organization of that part of the fish (particularly in the *torpedo*) which gives the shock, has a striking resemblance to the arrangement of a voltaic pile.

Q. Is it true that galvanic combinations have been formed with a single metal and a single fluid, and, in some instances, without the aid of any metallic substance?

A. Dr. Baconio, an Italian, is said to have excited galvanic convulsion in a frog, by means of a pile composed entirely of vegetable substances. And Aldini, the nephew of Galvani, produced galvanic effects by bringing into contact the nerve of one animal with the muscle of another; and in some instances with the nerves and muscles of the same animal.

APPENDIX.

To increase the utility of this volume to persons engaged or interested in public education, we subjoin a few more extracts from Dr. Kay's interesting Reports;* also from Professor Pillans' and Mr. Wood's account of the Edinburgh Sessional School; Jacotot's maxims for Teachers, &c.

INFANT SCHOOLS.

"In the infant school, the child is separated from the contaminating influence of the street or lane in which his parents reside. He no longer wanders about to contract filth and vice; his passions, under no wholesome restraint or guidance, daily growing in strength and distortion. It is required that he should be presented at the school cleanly in dress and person. His attention is aroused and captivated by a constant succession of infantile pleasures. He learns to rise, to sit, to march, to beat time, in concert with his fellows; he is taught to sing; in the song some sound precept or some useful knowledge is conveyed. A picture, or a living animal is produced, or a specimen from the museum, by which his acquaintance with the properties of natural objects is extended. When his vagrant fancy has been arrested, the teacher seizes the opportunity for instruction in other knowledge less capable of sensual illustration: an acquaintance with the leading facts of biblical history—a consciousness of the true basis of moral obligation—and a perception of the nature of religious duty, are sought to be imparted. Before weariness ensues, the whole school is marched in regular order into the playground, singing; here the master has an opportunity of observing the development of character, and of rendering the play-ground the scene of moral training.

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* Published by the Poor Law Commissioners, 1841. See also "Minutes of Committee of Council on Education."

"The peculiarity of the method of instruction adopted in infant schools is, that by a skilfully devised system of interrogation, the master discovers the limit of the child's knowledge, but he avoids supplying the child with information solely by direct didactic instruction. Having ascertained what the child does not know, he leads it, by a carefully planned succession of questions, as it were, to infer the truth, and, by having made the attainment of this knowledge an act of pleasurable mental exercise, he not only renders the pursuit of knowledge agreeable, but gives it a stronger hold on the memory. Since the instruction is not simply *conveyed*, but is made to depend upon an accompanying exercise of the child's mind, it is evident nothing can be learned by mere rote, but, on the contrary, every thing that is learned must be understood.

"The garden and play-ground are made the means of teaching the children to play without discord, and with an absence of the faults of language and manner acquired in the street; of conveying to them a sense of the importance of mutual forbearance, of the duty of protecting the weak, of the necessity of self-denial, of the inviolability of property not their own, &c. The frolic of the play-ground is not restrained by stern superintendence, but the master kindly assists in promoting order and good will, and occasionally, when the children return to school, makes any occurrence of the play-ground the source of instructive moral illustration by questioning the children respecting it, in such a way as to enable them to see clearly what is right and what is wrong.

"The system pursued in the best infant schools is now so generally understood, that this brief sketch may suffice to depict its general features.

"It is surprising, that while such a system is in course of general adoption in infant schools, the plan of teaching by rote should too generally prevail in the juvenile schools throughout the country; and I have chiefly been led to this brief sketch of the method of instruction adopted in infant schools, for the purpose of suggesting the inquiry—whether, if a similar natural system were adopted in juvenile schools, it would not be more profitable than that which is now pursued.

"Infants between the age of two and six, trained by this method, acquire a much more systematic and extensive acquaintance with natural objects and natural phenomena, have a clearer perception of the true basis of moral duty, and a more lively interest in religion, than the older children who have not had the advantage of this method, though trained in schools to considerable expertness in reading, writing, and arithmetic.

"The children in the infant schools would learn the *powers of* *letters* in small words, and afterwards their names, according to the phonic method invented by Labarre while a refugee in Holland in 1802, and since introduced into all the Dutch schools by M. Prinsen, and which is universally adopted in Saxony and other parts of Germany and in Prussia. The apparatus used in Holland is simple and efficacious; but for perfect success in the introduction of the method into England, some *primers** on a new principle, as well as new cards, will be required. I am not acquainted with any school in England or Scotland where this system is at present successfully practised. The utmost pains would be taken to train the children to connect the learning of the art of reading with its use. To this end they would never be permitted to read even small words without showing that they understood what they read; and all arbitrary combinations of letters would be discarded. In the Glasgow infant schools little or no effort is made to teach children to read before the age of six; and whatever instruction in this art is conveyed, is a concession to the wishes of the parents, contrary to the views of the directors. The phonic method, however, presents an easy solution of the difficulties which the directors have felt on this subject.

"The discipline and instruction of these schools should be purely infantile; mental precocity is seldom attained excepting at the expense of the health, the reason, or the happiness of the child. In the moral influence of the infant school consists its chief value. The child of the infant school becomes attached to learning as a pleasurable exercise; and if the method pursued be not suddenly disturbed, he may be led from the infant into the junior classes of the juvenile school with scarcely a perceptible transition, and so onward to the higher branches of instruction.

"The gallery is employed in the infant school as a means of arranging the children in a body under the eye of their teacher, and thus enabling him more readily to inspect and control them by arousing their attention, and bringing the sympathies of the body to act upon individuals. The concerted movements by which the teacher intersperses his instructions, and by which he contrives to get rid of momentary lassitude and inattention, are greatly facilitated by this arrangement."

"The teacher should depend mainly for his success upon his powers of rendering the instruction he conveys attractive to his pupils, and he will chiefly be liable to failure in this respect when he deserts the natural method of imparting knowledge, and neglects to assist this method with the lights of constant and varied illustrations. Such a method will enable the teacher to rule rather by love than by fear. He will not endeavour to coerce his pupil to remember a general truth which he does not understand; but by presenting to him, in a plain and familiar manner, certain simple elements from which the general truth springs, he will enable him to understand and to remember it, at the same moment, by a pleasurable exercise of mind.

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* These primers, with an accompanying manual for the use of teachers, will probably be published at an early period by the Committee of Council on Education.

"In a school in which these methods of instruction are adopted by a teacher of mild and persuasive character, there will exist little necessity for punishment, and all harsh and degrading chastisement may be at once discarded. It is also desirable that the motives for preserving activity and attention should not be derived from the temporary incentive of some immediate reward, but should arise from the natural attractions with which knowledge is invested, when a correct method of presenting its elements is pursued.

"A systematic avoidance of the stimulus of inferior motives, such as the fear of punishment, the hope of reward, and the often unworthy rivalry for personal distinction on account of proficiency, which is accompanied with mutual heart-burnings and jealousies, will enable the teacher to substitute in their place other motives of a superior nature. Intellectual proficiency being an object of inferior value to the establishment of *good habits*, care should be taken that this proficiency is not attained at the expense of those moral qualities, by the persevering development of which alone good habits can be formed. To learn from the fear of punishment, the hope of reward, or the desire of personal distinction, can be only mischievous to the moral sentiments, though the intellectual progress, under these stimuli, be rapid. The teacher should strive to invest knowledge with its own natural attractions. If he is skilful, he will not need any more powerful incentive to induce the children to learn than the natural craving after truth, when it is presented in simplicity, and with the force of novelty."

"The play-ground and gymnastic exercises are inseparable from a well-conducted juvenile school. The play-ground is well described by Mr. Stow, as the uncovered school, where the master has the opportunity of training the children in correct habits, and thus fostering in their development the principles with which he is careful they should become acquainted in the school. The play-ground of the school should, therefore, stand in the strongest contrast with the play-ground of the street or lane. The moral atmosphere of the school play-ground should be so purified by the careful exclusion of all vicious influences, that in the moment of the most unrestrained mirth there should be an unseen, but effectual screen from the contagion of bad example, and the errors which occur should be made the means of deterring the children from their repetition."

MULHÄUSER'S METHOD OF TEACHING TO WRITE.

"Formerly, at least in our schools, the method of teaching to write, from the absence of any acknowledged system, was necessarily abandoned to the inventive powers of each teacher. The lessons consisted in imitating copies with more or less exactness, without any effort on the part of the teacher to enable the child to comprehend the constituent elements of the forms he was required to copy; and therefore the faculty of imitation, and the mechanical dexterity of the fingers, were exercised without any assistance from the constructive powers. The error in this process was similar to that which characterised the earliest steps in other departments: young children were required to perform the complex, before they were able to accomplish the simple. The labour of analysis was imposed upon them before they had become familiar with the easier process of combination.

"The method of Mulhäuser consists in the decomposition of the written characters into their elements, and the classification of these elements, so that they may be presented to the child in the order of their simplicity, and that it may copy each of them separately. The synthesis or recomposition of these elements into letters and words, is the process by which the child learns to write. He combines the forms which he has learned to imitate. He recognises each separate simple form in the most difficult combinations, and, if he errs, is immediately able to correct the fault. If the master himself inadvertently commits a blunder, the child will often rectify it, without hesitation.

"The method enables the child to determine, with ease, the height, breadth, and inclination of every part of every letter. It would obviously be difficult to do this by rules alone, and such rules would not be easily understood by children, and would not be remembered without much effort. The method leads the children to the result described by practical expedient, and such rules as are desirable to rationalize these expedients are easily remembered as appendages to that which is recorded in the child's experience, though the rules would probably be forgotten, if such practical demonstrations did not precede them."*

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* The method of Mulhäuser has been fully described in a manual published by the Committee of Council on Education.

EDINBURGH SESSIONAL SCHOOL.

PROFESSOR PILLANS' account of the method of teaching to read in this school:—

"Supposing the child master of his letters, the next step is to combine and pronounce them in the easiest words, which of course are monosyllables of two letters. They are *words*, however—significant terms—part and parcel of the English language, and not unmeaning syllables. It is the more necessary to remark this, as the almost universal practice is to carry children through long columns of two, three, or four letters, which syllables go to the composition of words, but have in themselves no meaning; and the principle is assumed, that such syllabic reading is an indispensable preliminary to all that is to follow. In compliance with this preconceived notion, the child is detained long after the alphabet is known, in spelling and pronouncing b-a, *ba;* b-u, *bu;* b-l-a, *bla;* b-l-e, *ble;* s-t-r-a, *stra*, &c. Mr. Wood deserves the thanks of all parents for demonstrating the absurdity of this principle, and illustrating by successful practice the importance of a truth far too little attended to in teaching; that in the elementary acquisition of language, more especially of one's mother tongue, it is not necessary to teach every thing. The faculty of speech is so much a part of the human animal, or at least the powers of his mind are so admirably fitted for acquiring it, that he leaps to conclusions by a sort of instinct, and is apt to be retarded and stupified by the minute rules and creeping processes of masters, and spelling-books, and grammars. Nothing, therefore, can be more philosophical than the conduct of Mr. Wood, in entirely banishing the tiresome, and as he has proved, useless apprenticeship of syllabic reading, and plunging at once '*in medias res.*'

["The alphabet is taught in portions. Only a few letters are taught at once, and these are made familiar in all their combinations in simple words before passing to others.]

"The moment the pupil knows his letters, he begins to spell, pronounce, and *give the meaning* of words composed of them, such as *be, he, me, ox, ax*, &c. Thus from the very outset he is accustomed to attach ideas to words, and acquires insensibly the precious habit of not resting contented with sound, unless it be accompanied with sense. Not that we are to expect from the tyro accurate definitions of these monosyllables, or any definitions at all; at this early stage. Examples of their use in ordinary conversation will amply suffice to secure the primary object of interesting the understanding along with the eye and the memory. For example, (to take the word first named,) when the child says b-e, *be*; and upon the question being asked, what he means by *be*, answers 'I *am*,' or, 'if I *be* good, I shall *be* happy,' —we obtain an assurance that he has an idea corresponding to the term, and that it is so far correct as not to be confounded, for example, with *bee*.

"In such a monosyllable, however, as *ox*, we may look, even in the youngest, for something more than examples of its use in a sentence, supposing at least that all the children have seen an ox repeatedly. If they be left to themselves, each will describe or characterize the animal according to the circumstances in which he has been accustomed to see it. A butcher's son will call it, a beast that is killed to make beef for the market; a tanner's son will think of the hide and leather; a farmer's boy will, in one district, describe it as an animal that eats the grass and chews the cud, and in another, perhaps, as the beast that is yoked in the plough or the waggon. In this way, it is obvious, the knowledge of each boy is made available to all. And in all cases, it is important to bear in mind, that set forms of description or explanation are avoided. The appeal is always made to the knowledge of things, not to the memory of words.

"The monosyllabic words of two letters in the English language are only thirty-nine (including the interjections oh! ho! ah! ha!); but, though the number be small, and is far from exhausting the possible combinations of two letters, it is found quite sufficient to guide the child to the rest which occur in polysyllabic words.

"His next step, then, is to monosyllabic words of three letters. The same process takes place as before: thus, t-e-n, *ten*. 'What do you mean by ten?' 'The number *ten*,' says the child, or he unfolds his ten fingers. But in this stage, as three lettered monosyllables are too numerous to be all put down, an additional step is taken, which is well calculated not only to improve his spelling, and enlarge his acquaintance with his own language, but to sharpen his faculties, excite his curiosity, and extend his knowledge of nature. After explaining *ten*, he is asked whether he can think of any other word like *ten*,—that is, as we should say to a more advanced pupil, which rhymes with ten.

"Every little mind in the class is immediately at work, and one brings out *men*, which is spelled and explained; another, *pen*, in both senses, to write with, and to enclose sheep in; a third, *den*; a fourth, *fen*; a fifth, *wen*; a sixth, *hen*; and if the whole class be now at a stand, the master may add, *ken*, explaining its poetical use, and *ben*, with its Celtic application to a high hill. Thus also, *gem*, *stem*, *hem*; *jug*, *rug*, *mug*, *tug*, *zug*, &c.

"It is easy to see what opportunities are in this way afforded to a judicious teacher to convey useful information and wholesome counsel, not in certain dull hours set apart for *general knowledge*, but in small portions at a time, and frequently repeated, according as they are suggested by the business in hand, and when they are likely, on that very account, to make a deeper impression and be longer remembered.

"After a good deal of practice in this exercise, along with the spelling and reading of short significant sentences made out of such words, the pupil is advanced to words of four or more letters, and is not now required to spell the words before or while he reads. And as he proceeds to longer words, and sentences of more continuous meaning, the utmost care is taken that nothing shall be put into his hands which he is either unable to understand of himself, or cannot be led to comprehend by the teacher's explanation. It is not now examples only of the use of words that he is called on to give; descriptions and definitions are expected, not according to any regular form, either spoken or printed, but produced—it matters not at first how awkwardly, or with what homeliness of phraseology and illustration—direct from the idea existing in the mind of the learner. These constant efforts, assisted and corrected by the master, to clothe ideas in words, are the means used in the farther advance of the pupils, which give existence, in a surprisingly short space of time, to those precise and well-expressed statements of the force of particular words, and that perfect comprehension of the scope and tendency of the whole extract, whether it be narrative or a chain of reasoning, which have long excited the astonishment of all visitors to the school of Mr. Wood, and sent many well-educated persons away with an humbling and almost oppressive sense of their own inferiority."

Extracts from Mr. Wood's account of the Edinburgh Sessional School:—

"In all their arrangements they have regarded their youngest pupil, not as a machine, or an irrational animal, that must be driven, but as an intellectual being, who may be led; endowed, not merely with sensation and memory, but with perception, judgment, conscience, affections, and passions; capable, to a certain degree, of receiving favourable or unfavourable impressions—of imbibing right or wrong sentiments—of acquiring good or bad habits—strongly averse to application, where its object is unperceived or remote, but, on the other hand, ardently curious, and infinitely delighting in the display of every new attainment he makes. It has, accordingly, been their anxious aim to interest no less than to task,—to make the pupil understand (as much as possible) what he is doing, no less than to exact from him its performance,—familiarly to illustrate and copiously to exemplify the principle, no less than to hear him repeat the words of a rule, —to speak to him, and by all means to encourage him to speak, in a natural language which he understands, rather than in irksome technicalities, which the pedant might approve,—to keep him, while in school, not only constantly, but actively, energetically employed,—to inspire him with a zeal for excelling in whatever is his present occupation, (whether it be study or amusement,) and even where he is incapable of excelling others, still, by noticing with approbation every step, however little, which he makes towards improvement, to delight him with the consciousness of excelling his former self.

"These obvious principles may be grafted on a variety of systems of external arrangement, adapted to the particular circumstances and object of each individual seminary; but for any defect of the principles themselves, or of a due sense of their paramount importance, we conceive that no system of external arrangement, however beautiful—no selection of books, however judicious—no talents or accomplishments on the part of the instructor, however brilliant and transcendent, can ever in any degree compensate."

In adopting the system pursued at the Sessional, or indeed any school, it is of great importance to bear in mind, that its *machinery*, or plan of external arrangement may be imitated, while the spirit that animates the whole may be entirely wanting. From inattention to this fundamentally important truth, how large a proportion, unfortunately, of the schools instituted even upon the most justly celebrated systems, have been allowed to become little better than mere pieces of mechanism.

"The copyist may introduce precisely the same number and the same size of classes,—may place the master, the monitors, and the scholars, in the same respective positions,—may prescribe to them the same movements,—may put the same books into their hands,—and, in short, may give the whole the selfsame external aspect. But if he be not at least equally desirous to catch the *spirit* as to imitate the *forms*,—to keep steadily in view the ends, which it is the legitimate object of education to attain, as well as the steps, which under proper guidance, may facilitate their attainment,—if he imagine that any artificial contrivance whatever can, in the slightest degree, supersede the necessity of diligence and zeal, of earnestness and kindliness of manner, on the part of the instructor,—if he treat his pupils more as mechanical than as intellectual beings, attempting rather to cram into them a certain definite quantity of instruction, than to inspire them with the taste, and furnish them with the power, of acquiring knowledge for themselves,—if he content himself with teaching them to repeat by rote, with slavish precision, rules of which they are left alike ignorant of the principle and of the application; or to pronounce, with formal tone and measured cadence and inflection, a mere jargon of sounds, to which they have never learned to attach the slightest signification,—let him not wonder, if notwithstanding all the pains which he has bestowed on the externals of his system, it should degenerate into as dull, cold, and lifeless a *routine*, as is exhibited in any of the most unproductive seminaries around him."

In the chapter on the *Office and Duty of Directors*, are the following excellent remarks. They deserve the serious attention of all who act in the capacity of patrons or managers of public schools.

"Wherever a seminary is under the management of directors, its success or failure may, in a great measure, depend upon the manner in which they discharge their important duties. By cold indifference, on the one hand, they may, to a certain degree, damp the ardour even of the most zealous teacher. By officious interference, on the other, they may paralyse his best exertions. If, for example, they give themselves no farther trouble about their seminary, than visiting it perhaps once a year on a public day, may not the indolent teacher become remiss, and even the zealous wax cold? If they prescribe and obstinately adhere to a system of education or discipline, which, however beautiful it may appear to them in theory, is by him found practically inefficient,—what avail his best exertions? If they anxiously discourage all attempts, on his part, at improvement, upon no better ground than that he cannot point his finger to the chapter and verse, where it is 'so nominated' in the code of Lancaster or Bell, or some other equally orthodox authority, to which his superiors have thought proper most religiously to attach their faith,—he must patiently submit to the mortification of seeing his seminary far outstript by those of others, perhaps much his inferiors, who are either left uncontrolled, or are, at least, placed under more judicious control. Or if, on the other hand, 'carried about with every wind' of opinion, they readily admit, for the purpose of experiment, every crude suggestion which may be made, either by their own number, or by others alike inexperienced in teaching; or recklessly adopt any particular part of a system, which, as a whole, has proved successful elsewhere, without viewing it in all its bearings, as connected either with other arrangements, or with the peculiar circumstances of the institution—what is naturally to be expected from such a mode of management? What but inconstancy and perpetual vacillation;—each upstart fancy of to-day expelling that of yesterday, and destined in its turn either to give place to that of to-morrow, or to be blended with it in an incongruous manner, resembling a species of the most ill-assorted, ill-compacted mosaic.

"There are few errors against which directors should be more on their guard, than that of fettering their teacher with too many and minute regulations. Having taken due pains to place a proper person in a situation so important and responsible, and traced out to him, if necessary, the outlines of the system which they wish him to adopt, they should leave it to himself to fill up the rest. Nor is it in their collective capacity only, that they should carefully abstain from all unnecessary interference. Little do themselves often know the chilling influence of a single heedless expression, by which they 'just hint a fault, and hesitate dislike.' The like caution is, to a certain degree, necessary, in the conduct of principals, rectors, and other superiors towards their inferior teachers. But, perhaps, most of all is it essential in the conduct of parents, subscribers, &c., both towards the teachers, and towards those to whom has been confided the management of such institutions.

"In looking out for a teacher in any department of instruction, there is a strong tendency to pay almost exclusive attention to the candidate's own attainments in knowledge, with little or no regard to his capacity of communicating the elements of that knowledge to those who, as yet, are uninitiated. To ascertain *the former* qualification, a comparative trial is not unfrequently instituted; and if, in this ordeal, (by no means always affording the most unexceptionable test even for its own purpose,) the candidate be successful, *the latter* qualification is taken for granted. Nothing, however, can be a greater mistake. It is very true that a man cannot give to others what he has not himself; but it does by no means follow that, because he himself possesses knowledge in great perfection, he must, therefore, proportionably be endowed with the faculty of communicating the rudiments of that knowledge to others.

"Among other particulars which APTITUDE FOR TEACHING implies, we may mention the communication of any particular piece of instruction, at the time, and in the manner, in which it is most likely to arrest the attention of the pupil, and to make the most lasting impression upon his mind,—and a readiness to suggest, or rather to draw forth from himself familiar illustrations of every subject, adapted to his age, and to the circumstances in which he is placed.

"The curiosity of a young person, as Locke has well obserought by no means unnecessarily 'to be balked,' and the teacher, who is persuaded of the truth of this philosopher's observation, that 'a child will learn three times as much, when he is in tune,' as at any other time, is much more likely to put his pupils in tune, and to find them in it, than he who consults only his own inclinations, or moves continually in the same unvaried round. A single rash rebuff, or cold reply, given to a child at a moment when his curiosity is most ardent, may mar for life the most promising scholar."

JACOTOT'S MAXIMS FOR TEACHERS.

"1.—Your first and great duty is, to keep your pupil constantly employed about some useful subject. Never suffer him to waste or slumber away his time. Admonish—stimulate him *to do something*.

"2.—Present objects, and sentiments, and facts, for his consideration, now in one position, now in another. Oblige him to observe them on all sides. Ask him if he has seen *all*, and leave him to discover.

"3.—Oblige him to reflect on every thing that he sees, by requiring him to write or express his thoughts upon it.

"4.—Call upon him to verify his opinions and expressions, to justify all that he does, by referring to reason or authority.

"5.—Never expect that he will *perceive or say every thing* relating to a subject. *You cannot.* Do not anticipate that he will *understand every thing*. *No man does.* Be satisfied if he is sensible of his ignorance,—if he is learning something. Rome was not built in a day.

"6.—Do not therefore attempt to force matters by your own explanations. He does not need them. They will debase him by making him think himself dependent for his ideas on the intellect of others. They will make him a sluggard. Leave him to learn alone, and he will find them himself in due season.

"7.—Do not correct his mistakes. Oblige him to search for them. Give him time, and he will correct himself. Do not make him a machine, to be moved by your impulse.

"8.—Encourage him to effort, by approbation of his success. Stimulate him, by showing him that he is yet imperfect. Subdue his vanity, by convincing him that every one can do the same with proper effort.

"9.—In short, act upon the principle that *human intelligence* is a unit—that the difference of men consists in the power of attention and will, and in the degree of knowledge—and you will find reason to believe it true. Teach your pupils to believe that they are able, and you will find them able. Cultivate the spirit of resolution—the force of will—and you will do more to make them scholars, than by volumes of explanation.

"10.—When you have succeeded in inducing them to exert their powers, and to be conscious of their independence of others for knowledge; they are *emancipated.* Then you may aid them occasionally by your experience and knowledge with safety and usefulness."

JACOTOT'S MAXIMS FOR PUPILS.

"1.—*Resolve to learn something without assistance.*

"2.—You may begin with what you please, and with any part of the subject which you prefer. Nothing is easy, nothing is difficult. All is difficult to the will—all is easy to the intelligence.

"3.—*Believe that you can learn* what you resolve to learn. The *first* artists and learned men had no teachers; and many since have attained the highest eminence without aid. What man has done, man can do. All that is necessary is attention and resolution.

"4.—To emancipate yourself, the *thing learned* is not important. The *manner of learning* is essential.

"5.—Rivet your attention upon what you are to learn.

"6.—Learn it thoroughly, so that every part of it may be *present to the mind;* so that you may *recall it without hesitation;* that you may *refer to it with absolute certainty.*

"7.—REFER ALL THAT YOU LEARN TO THIS. COMPARE ALL WITH THIS.

"8.—Be not discouraged if you do not understand at first. Review and repeat again and again what you learn, and you will gradually understand more and more.

"9.—Do not despise this as mechanical knowledge. The greatest philosopher first learns a subject or an object mechanically, examines all its parts, and then attempts to reason about it. To reason earlier, is to reason prematurely, and to this are due many of the received errors. The subject is decided on before it is thoroughly learned. Sir Isaac Newton said, he made his great discoveries merely by *thinking about them.*

"10.—To learn by heart is nothing. It is mere *knowledge*—mere mental perception. We cannot help perceiving unless we shut our eyes. To *use* this knowledge is *intelligence.*

"11.—Commence with the *whole*, and not with the parts.

"12.—Examine it on *all sides*, in *all relations*. When you have thoroughly learned the whole, examine the *parts*. Analyze forms, and sounds, and ideas, every thing which belongs to it, and classify them.

"13.—In music and oral language, employ your master as you do a musical instrument—as the machine, the book from which you are to learn what cannot be written. Imitate him precisely. Observe and compare his tones with yours, correct where you find them vary. Repeat the same tones day after day, until you can perceive no error.

"14.—In design or description observe the object. Describe or draw it. Review what you have done. Observe the defects. Correct, observe, and describe, or draw again until you can satisfy yourself.

"15.—In learning a language, observe in the same way the words and expressions used by the best writers in that language. When you have the *same ideas* to express, employ the *same words* in the *same form* and the *same order*, and you cannot but write correctly. There is no other rule for correctness in language, but those derived from its writers and speakers, and if you read good writers, you will imitate and practise on these rules.

"16.—Compare the writer with himself. Observe how he employs new words, or how he varies the form and order of words, according to the sense. Draw out from them a scheme of forms or a set of rules. If you prefer it, begin with the grammar. But make yourself master of the principles, and especially verify them all by comparing them with an author.

"17.—In studying any author, learn first what he says on the subject perfectly. Reflect on it. Compare one part with another. Examine for yourself. Write his views and your own reflections. *Verify* them by comparing and re-examining. Thus you will become acquainted with the subject and with the art of writing and reasoning."

THE END.

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"Rotterdam, Holland, Feb. 4, 1840.

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* Rev. J. Bosworth, LL.D.; Dr. Phil. of Leyden; B.D. of Trinity College, Cambridge; F.R.S.; F.S.A. &c. &c.. Dr. Bosworth has lately published "A Dictionary of the Anglo-Saxon Language," which the leading Reviews concur in describing as the most learned and most important work yet published on the origin and structure of the English language. It is almost unnecessary to add, that, except by his literary fame, Dr. Bosworth is unknown to the author.

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